OUT OF CONTROL?
A lawn-care debacle reminds Bart Perkins how diligent you have to be when outsourcing IT. **PAGE 52**

IT CRIME WAVE
A retail security breach leads to unprecedented levels of debit card fraud. **PAGE 12**

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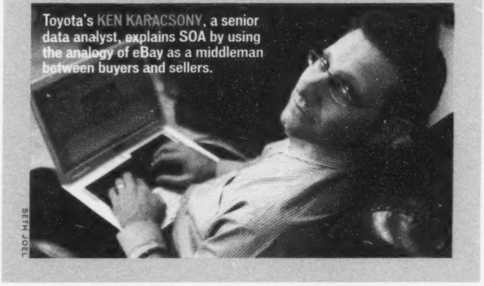
[FOUR STEPS TO SOA]

Stressed out by the move to service-oriented architecture? Here's a simple guide from one of your peers who has figured it out. **PAGE 43**



Toyota's KEN KARACSONY, a senior data analyst, explains SOA by using the analogy of eBay as a middleman between buyers and sellers.

SETH JOEL

IT Sees More Promise Than Peril in AT&T-BellSouth Deal

Emerging telecom technologies will keep competition alive, users say

BY CRAIG STEDMAN

Several IT managers said last week that they will keep a close watch on AT&T Inc.'s planned acquisition of BellSouth Corp. But they added that overall, the accelerating consolidation within the telecommunications industry appears to hold more potential benefits than drawbacks for their companies.

The $67 billion stock-swap deal would give AT&T control of four of the seven regional Bell companies that were created after the 1984 breakup of the original AT&T Corp. The new AT&T, which was formed when SBC Communications Inc. bought the remnants of AT&T Corp. last year and took on the latter's name, would also gain full ownership of Cingular Wireless LLC, the top wireless carrier in the U.S.

If the acquisition goes through, AT&T would be able to offer a full set of local, long-distance, wireless and enterprise networking services to users across a broad swath of the Southern and Midwestern U.S., as well as in California and Connecticut.

Some of the IT executives interviewed after the merger was announced said they're concerned that the cost of services could increase as a result of diminished competition.

BLALOCK: It will be easier to deal with one vendor.

"There's a possibility that [the industry] will go back into a state like it was in the past, before deregulation," said John Fisher, who until late January was CIO at SmithBucklin Corp. in Chicago. Fisher, who has started a consulting firm called Rethinking IT Inc. in Mount Prospect, Ill., added that if vendors become "the only game in town," they can try to take a different approach with users.

But new technologies such

AT&T-BellSouth, page 58

100 PREMIER Getting IT Right (FOR THE BUSINESS)

At Computerworld's Premier 100 conference, IT execs detailed what they're doing to turn their operations into true corporate assets. Plus: A Q&A with HP's Randall Mott, a look at how some CIOs are developing new IT leaders, and examples of companies that are making global IT work for them.

ASA MATHAT

We're not going to try to do as many things [at once] as we tried to do before.

RANDALL MOTT,

Coverage of the conference. **Pages 6-8**

A panel discussion shows that when the going got tough along the Gulf Coast last summer, the tough IT managers got to work, writes Don Tennant. **Page 22**

Read how our 12 top award-winners broke new IT ground. **Supplement appears between pages 16 and 17.**

Keynote Comments Spark Debate Over VoIP

Users weigh cost savings against business improvements

BY MATT HAMBLEN
ORLANDO

Avaya Inc. CEO Don Peterson surprised some IT managers at VoiceCon Spring 2006 by declaring that managers should not deploy IP telephony to lower communications costs. Instead, he said, they should look to improve their business operations.

Peterson's comments, made in a keynote address here last week, stood in stark contrast to presentations from several businesses well on their way to outfitting their companies with new IP-based networks, phones and applications.

Jeff Lemmer, manager of global telecommunications at Ford Motor Co., said the automaker conducted a thorough financial review of voice-over-IP

VoIP, page 16

NEWSPAPER

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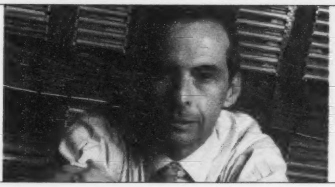

Unifying Force

In the Technology section: The Session Initiation Protocol has been slow to mature, but IT professionals like Stewart Seruya of the University of Miami say it promises to boost the acceptance of unified messaging. **Page 25**

How to Talk Business

In the Management section: The pressure is on for CIOs to translate proposed initiatives into business terms — even if the ROI is hard to quantify. Here's how. **Page 46**

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PREMIER 100

IT LEADERS CONFERENCE

Coverage of *Computerworld*'s Premier 100 conference in Palm Desert, Calif.

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7 Q&A: **HP CIO Randall Mott on consolidating his data centers.**

8 **Companies launch programs for training future IT leaders.**

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ONLINE

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Best Privacy Consultancies

OPINION: Privacy officer Jay Cline surveys his peers to identify the leading "hired guns" among law firms and auditors. Find out who chief privacy officers turn to when they want some consulting help.
QuickLink a8220

The Challenges of IT

NETWORKING: A 20-year industry veteran discusses the impact of wireless networking, today's thorniest problems and the technologies of tomorrow. **QuickLink a8240**

Instant Connectivity Improves Health Care

MOBILE/WIRELESS: Hospital staffers can stay in touch using badges that allow communications at the touch of a button over a wireless VoIP system, improving efficiency and cutting costs. **QuickLink a8260**

When Failure Isn't

IT MANAGEMENT: Professor Ryan Nelson of the University of Virginia says a project's perceived success depends on whom you ask. **QuickLink a8250**

Sprint's Pocket PC: Smart, Not Showy

REVIEW: The streamlined look of the PPC-6700 smart phone will appeal to the less tech-savvy, but it's loaded with features that will engage advanced users.
QuickLink a8230

Roll With the Punches

SECURITY: If hackers hit a major bank, does your business feel the punch? Weigh in on our Security Knowledge Center poll: **computerworld.com/securitytopics/security**

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IT Puts Its House In Order, for the Sake of Business

Tech managers streamline ongoing initiatives, prioritize projects with corporate execs

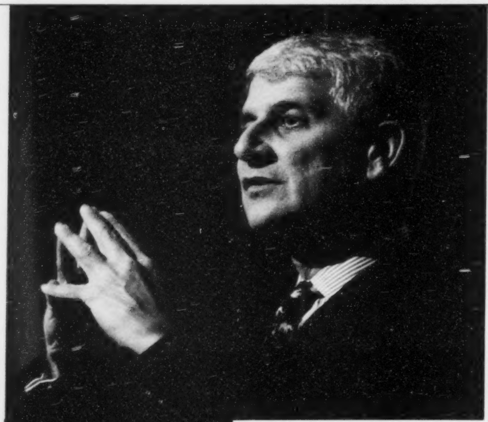
BY HEATHER HAVENSTEIN
PALM DESERT, CALIF.

AS IT executives seek to transform their operations into true corporate assets that can help grow the business at their companies, many are finding that first they must impose much tighter controls over their often vast and unwieldy portfolios of technology projects.

Numerous speakers and other attendees at *Computerworld*'s seventh annual Premier 100 IT Leaders Conference here last week said they are moving quickly to put in place new portfolio management policies and tools. The goal is to ensure that their IT staffs are doing work that meets business priorities and can generate the highest possible return on investment.

For example, Randall Mott, who took over as CIO at Hewlett-Packard Co. last year, said in a keynote speech that he found at least 10 major IT budgets that were separate from one another, plus a variety of "shadow" IT activities that were going on outside those budgets. Altogether, HP had about 1,200 IT projects in the works, he said.

Now he plans to cut the number of projects that are typically under way at the company to 500 or so through more rigorous planning and portfolio management. As part of the new approach, HP's executive council will meet with Mott and other IT managers every 60 days to prioritize major projects, check the status of ongoing work and consider proposed initiatives.


PREMIER 100 PHOTOGRAPHY BY ASA MATHAT

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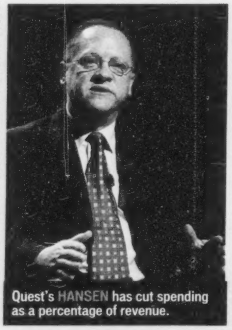
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At BT Group, CIO Al-Noor Ramji is trying to downsize nearly 3,700 systems into just 14 major technology platforms. Ramji said he also is insisting that all IT projects be evaluated on the same two metrics: development cycle time and whether the work was done right the first time.

– HEATHER HAVENSTEIN, ERIC LAI AND CRAIG STEDMAN

WHAT NEEDS FIXING

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BASE: 162 Premier 100 honorees and registered attendees for last week's conference. The respondents were surveyed by *Computerworld* via the Internet last month.

you've got to show some business value every 90 days," he said, noting that unsuccessful projects lose their funding.

The new approach, which took effect at the start of last year, also includes a process in which six to nine technical teams develop prototypes for a customer, which picks the winning design. Members of the winning teams get bonuses that are equal to 10% of their quarterly salaries, as do members of project teams that meet their 90-day goals, Ramji said.

The makeover puts "huge peer-group pressure" on IT workers, Ramji noted. But it has helped IT move "from what I call 'cleaning the toilets' — just keeping the systems running — to where we're core to the business," he said.

Mitchell Hansen, vice president of enterprise systems and services at Quest Diagnostics Inc. in Lyndhurst, N.J., said shifting to portfolio management has helped the diagnostic testing firm "significantly" reduce IT spending as a percentage of revenue over the past few years, to between 4% and 4.5%. "We have fewer surprises after the fact on projects," he said. "That's a true benefit of some discipline."

Avery Cloud, CIO at New Hanover Health Network in Wilmington, N.C., said that when he joined the health care provider two years ago, it was working on several resource-intensive projects that promised large returns on investment but "absolutely wore the [IT] organization out."

Cloud said he wanted to better prioritize projects and avoid having too many high-risk initiatives under way at one time. Fifteen months ago, he installed Compuware Corp.'s Changepoint application portfolio management software, which has helped New Hanover whittle its portfolio of projects from 150 last year to about 100 now.

This year, Cloud plans to start using the tool to measure the cost and business value of specific application portfolios, such as Hanover's nursing applications. That should help officials "make intelligent decisions, versus guessing when prioritizing projects," he said.

Six months ago, Bill Lewkowski, CIO at Metropolitan Health Corp. in Grand Rapids, Mich., launched a pilot of a portfolio management initiative designed to provide more visibility into project costs and returns. Lewkowski also hopes it will help stamp out shadow IT work. "We need to have a better single place of truth for our projects and services," he said. ◗

Eric Lai and Craig Stedman contributed to this story.

ONLINE EXTRAS

In a Q&A, Michael Theis, chief of cybercounterintelligence at the U.S. National Reconnaissance Office, talks about the concept of "agile security."

A panel of IT executives discusses how their staffs are working to support increased business agility.

Tim Stanley, CIO at Harrah's Entertainment, says in an interview that "speed is key" in integrating acquired companies.

Read the conference blog and post your own comments.

For full conference coverage, go to: www.computerworld.com/premier100now

Execs Look to Dim Data Center Lights

PALM DESERT, CALIF.

HEWLETT-PACKARD CIO Randall Mott's belief that "lights-out" data centers are possible was generally accepted by other IT managers at the Premier 100 conference, even if they disagreed over whether the necessary tools are far enough along to turn the lights out completely or just dim them.

As part of a plan to reduce the number of the company's data centers from about 85 worldwide to just six, Mott is setting out to prove that HP can develop a data center that can be operated entirely remotely. The plan, which Mott detailed at last week's conference, also includes consolidating more than 700 data marts into an enterprise data warehouse.

Mott said the consolidation moves are aimed at helping HP reduce its IT spending level from about 4% of annual revenue to 1.5% by the end of the company's 2008 or 2009 fiscal year.

A staffless data center is "absolutely conceivable," thanks to the availability of remote management tools, said Bob Jellison, vice president of information services at Papyrus Franchise Corp., a retailer in Fairfield, Calif.

But in Jellison's view, the long-term issue won't be so much lights-out operations but whether IT managers want to keep running their own data centers or hand them off to outsourcing vendors. "Do you really need to be running all those servers?" he asked.

Among those waiting to be convinced that a true lights-out data center is feasible is David Hackbarth, acting chief for technology and information at the U.S. Census Bureau's national processing center in Jeffersonville, Ind.

Hackbarth is involved in a project to consolidate and standardize his IT environment on Linux and Windows systems, primarily blade servers. Through virtualization, the processing center has already reduced the number of physical servers it runs from more than 160 to about 60, he said.

But even with the increased standardization, Hackbarth said he thinks that staffing will be needed in the Census Bureau's data center to guard against technical problems.

That view is shared by Oliver Schmid, manager of information systems at Duluth, Ga.-based Alfred Karcher Inc., a subsidiary of a Winnenden, Germany-based cleaning equipment maker.

"I don't believe in lights-out data centers. I believe in dim lights," Schmid said. IT facilities will still need operations workers with versatile talents – "people who know a little bit of everything," he said.

Other conference attendees said the viability of lights-out data centers is dependent on improvements in management software, such as predictive tools that can give users advance warnings of imminent system failures.

– PATRICK THIBODEAU

Mott Promises an Open-Door Policy On Data Centers

CIO says HP will be 'very forthcoming' on the status of its consolidation move

PALM DESERT, CALIF.

Q A After his keynote speech at the Premier 100 conference, Hewlett-Packard CIO **Randall Mott** spoke with *Computerworld* about his makeover plans for HP's IT operations. Mott's strategy includes consolidating HP's data center systems worldwide into three sets of paired facilities that will all be located in the U.S. Excerpts from the interview follow:

Where are you in terms of accomplishing your plan to consolidate HP's data centers into six facilities? We're in the process of identifying all the sites [for the new data centers]. We have some identified; we have options on real estate or buildings in the case of a number [of them]. By the end of March, we will have all six of them identified and announced.

Will they be geographically dispersed around the world? No. Where it's looking like right now is Houston, Austin and Atlanta.

You've talked about a "lights-out" data center. Are you talking about that in terms of these six data centers? Yes, I am.

Can you explain just what you mean by that? Literally, in order to run the data center, inside the data center, you only have personnel required for security, and not for IT operations. IT operations really end up being something that can happen anywhere in the world.

HP sees this as an opportunity to showcase its technology to potential customers. What kind of pressure does that put on you? It's certainly pressure to talk about things before they are finished. That's probably the biggest pressure. But on the other side, it actually will bring us a lot of support and help from the product and R&D communities [within HP] because they see it as being important.

The typical ratio of systems administrators to servers inside data centers has been described as 1-to-20, but HP officials have said 1-to-200 is possible. What kind of ratio will you be running in the new facilities? I don't want to comment on that, but I think we will exceed 1-to-200.

If you are making this into a customer showcase, how forthcoming will you be with users as the plan moves forward? Will you disclose lessons learned – the things that went wrong, the things you could have done better? I think part of our responsibility as being part of Hewlett-Packard is to be very forthcoming on, "Here's what we started with, we decided there were problems with this, we changed course." There will be certainly lessons learned along the way, and I don't know what the right milestones will be. But my guess is it will be multiple times a year.

Certainly, one of the things you do by making a public statement like you do in a forum as widely followed as this [conference, you're] going to have everyone asking, "Where are you at now?"

When do you see the data center consolidation being completed? Our goal right now is the end of [fiscal] '08, which is literally Oct. 31, 2008. A lot of it will happen, quite frankly, next year. We will get some consolidation done at the end of this year. A lot of the heaviest lifting will happen in FY '07.

– PATRICK THIBODEAU

IT Puts Its House In Order, for the Sake of Business

Tech managers streamline ongoing initiatives, prioritize projects with corporate execs

BY HEATHER HAVENSTEIN
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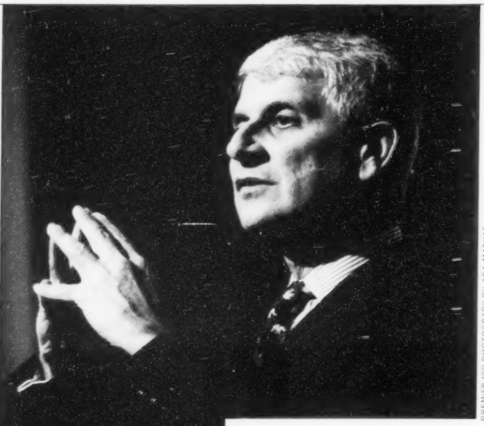

PREMIER 100 PHOTOGRAPHY BY ASA MATHAT

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you've got to show some business value every 90 days," he said, noting that unsuccessful projects lose their funding.

The new approach, which took effect at the start of last year, also includes a process in which six to nine technical teams develop prototypes for a customer, which picks the winning design. Members of the winning teams get bonuses that are equal to 10% of their quarterly salaries, as do members of project teams that meet their 90-day goals, Ramji said.

The makeover puts "huge peer-group pressure" on IT workers, Ramji noted. But it has helped IT move "from what I call 'cleaning the toilets' — just keeping the systems running — to where we're core to the business," he said.

Mitchell Hansen, vice president of enterprise systems and services at Quest Diagnostics Inc. in Lyndhurst, N.J., said shifting to portfolio management has helped the diagnostic testing firm "significantly" reduce IT spending as a percentage of revenue over the past few years, to between 4% and 4.5%. "We have fewer surprises after the fact on projects," he said. "That's a true benefit of some discipline."

Avery Cloud, CIO at New Hanover Health Network in Wilmington, N.C., said that when he joined the health care provider two years ago, it was working on several resource-intensive projects that promised large returns on investment but "absolutely wore the [IT] organization out."

Cloud said he wanted to better prioritize projects and avoid having too many high-risk initiatives under way at one time. Fifteen months ago, he installed Compuware Corp.'s Changepoint application portfolio management software, which has helped New Hanover whittle its portfolio of projects from 150 last year to about 100 now.

This year, Cloud plans to start using the tool to measure the cost and business value of specific application portfolios, such as Hanover's nursing applications. That should help officials "make intelligent decisions, versus guessing when prioritizing projects," he said.

Six months ago, Bill Lewkowski, CIO at Metropolitan Health Corp. in Grand Rapids, Mich., launched a pilot of a portfolio management initiative designed to provide more visibility into project costs and returns. Lewkowski also hopes it will help stamp out shadow IT work. "We need to have a better single place of truth for our projects and services," he said. ▶

Eric Lai and Craig Stedman contributed to this story.

ONLINE EXTRAS

In a Q&A, Michael Theis, chief of cybercounterintelligence at the U.S. National Reconnaissance Office, talks about the concept of "agile security."

A panel of IT executives discusses how their staffs are working to support increased business agility.

Tim Stanley, CIO at Harrah's Entertainment, says in an interview that "speed is key" in integrating acquired companies.

Read the conference blog and post your own comments.

For full conference coverage, go to: www.computerworld.com/premier100now

Execs Look to Dim Data Center Lights

PALM DESERT, CALIF.

HEWLETT-PACKARD CIO Randall Mott's belief that "lights-out" data centers are possible was generally accepted by other IT managers at the Premier 100 conference, even if they disagreed over whether the necessary tools are far enough along to turn the lights out completely or just dim them.

As part of a plan to reduce the number of the company's data centers from about 85 worldwide to just six, Mott is setting out to prove that HP can develop a data center that can be operated entirely remotely. The plan, which Mott detailed at last week's conference, also includes consolidating more than 700 data marts into an enterprise data warehouse.

Mott said the consolidation moves are aimed at helping HP reduce its IT spending level from about 4% of annual revenue to 1.5% by the end of the company's 2008 or 2009 fiscal year.

A staffless data center is "absolutely conceivable," thanks to the availability of remote management tools, said Bob Jellison, vice president of information services at Papyrus Franchise Corp., a retailer in Fairfield, Calif.

But in Jellison's view, the long-term issue won't be so much lights-out operations but whether IT managers want to keep running their own data centers or hand them off to outsourcing vendors. "Do you really need to be running all those servers?" he asked.

Among those waiting to be convinced that a true lights-out data center is feasible is David Hackbarth, acting chief for technology and information at the U.S. Census Bureau's national processing center in Jeffersonville, Ind.

Hackbarth is involved in a project to consolidate and standardize his IT environment on Linux and Windows systems, primarily blade servers. Through virtualization, the processing center has already reduced the number of physical servers it runs from more than 160 to about 60, he said.

But even with the increased standardization, Hackbarth said he thinks that staffing will be needed in the Census Bureau's data center to guard against technical problems.

That view is shared by Oliver Schmid, manager of information systems at Duluth, Ga.-based Alfred Karcher Inc., a subsidiary of a Winnenden, Germany-based cleaning equipment maker.

"I don't believe in lights-out data centers. I believe in dim lights," Schmid said. IT facilities will still need operations workers with versatile talents – "people who know a little bit of everything," he said.

Other conference attendees said the viability of lights-out data centers is dependent on improvements in management software, such as predictive tools that can give users advance warnings of imminent system failures.

– PATRICK THIBODEAU

Mott Promises an Open-Door Policy On Data Centers

CIO says HP will be 'very forthcoming' on the status of its consolidation move

PALM DESERT, CALIF.

Q A After his keynote speech at the Premier 100 conference, Hewlett-Packard CIO **Randall Mott** spoke with *Computerworld* about his makeover plans for HP's IT operations. Mott's strategy includes consolidating HP's data center systems worldwide into three sets of paired facilities that will all be located in the U.S. Excerpts from the interview follow:

Where are you in terms of accomplishing your plan to consolidate HP's data centers into six facilities? We're in the process of identifying all the sites [for the new data centers]. We have some identified; we have options on real estate or buildings in the case of a number [of them]. By the end of March, we will have all six of them identified and announced.

Will they be geographically dispersed around the world? No. Where it's looking like right now is Houston, Austin and Atlanta.

You've talked about a "lights-out" data center. Are you talking about that in terms of these six data centers? Yes, I am.

Can you explain just what you mean by that? Literally, in order to run the data center, inside the data center, you only have personnel required for security, and not for IT operations. IT operations really end up being something that can happen anywhere in the world.

HP sees this as an opportunity to showcase its technology to potential customers. What kind of pressure does that put on you? It's certainly pressure to talk about things before they are finished. That's probably the biggest pressure. But on the other side, it actually will bring us a lot of support and help from the product and R&D communities [within HP] because they see it as being important.

The typical ratio of systems administrators to servers inside data centers has been described as 1-to-20, but HP officials have said 1-to-200 is possible. What kind of ratio will you be running in the new facilities? I don't want to comment on that, but I think we will exceed 1-to-200.

If you are making this into a customer showcase, how forthcoming will you be with users as the plan moves forward? Will you disclose lessons learned – the things that went wrong, the things you could have done better? I think part of our responsibility as being part of Hewlett-Packard is to be very forthcoming on, "Here's what we started with, we decided there were problems with this, we changed course." There will be certainly lessons learned along the way, and I don't know what the right milestones will be. But my guess is it will be multiple times a year.

Certainly, one of the things you do by making a public statement like you do in a forum as widely followed as this [conference, you're] going to have everyone asking, "Where are you at now?"

When do you see the data center consolidation being completed? Our goal right now is the end of [fiscal] '08, which is literally Oct. 31, 2008. A lot of it will happen, quite frankly, next year. We will get some consolidation done at the end of this year. A lot of the heaviest lifting will happen in FY '07.

– PATRICK THIBODEAU

Great IT Leaders Have To Be Made, Execs Say

BY ERIC LAI
PALM DESERT, CALIF.

To Kay Palmer, promoting techies into management jobs solely because they have a neat appearance and some people skills isn't the best way to pick the IT leaders of tomorrow. "Often, you lose your best technician and only get a so-so manager," she said last week.

Palmer, CIO at J.B. Hunt Transport Inc. in Lowell, Ark., led the development of an IT management training program that has been adopted by the trucking firm's human resources department for use in other parts of the business. "We really did end up with better managers as a result of this," Palmer said at *Computerworld*'s Premier 100 IT Leaders Conference.

But for many companies, the recruitment and development of future IT leaders remains a back-burner concern, according to conference attendees.

"As long as tech organizations can run reasonably effectively, there is no imperative to focus on leadership development," said Jerry Bartlett, CIO at TD Ameritrade Holding Corp. in Omaha. But, he added, that's a shortsighted view. "My biggest concern is that by giving short shrift [to IT leadership], there will be a lack of extraordinary leaders in the next generation," said Bartlett, who took part in a panel discussion on grooming future IT leaders.

At TD Ameritrade, Bartlett has paid out of his own budget for an 18-month program that involves a full day of management training each month and pairs trainees with executive mentors. The program requires "quite a commitment" from participants, he said.

Palmer, who spoke at the conference, said she strongly believes in surveys showing that the performance of employees is most directly correlated with the quality of their bosses, not with their salaries or corporate culture.

The program created by Palmer to identify and train future leaders from among J.B. Hunt's 340-person IT team has three parts. First, management aspirants are identified through recommendations and profiled via a battery of evaluations, such as the Myers-Briggs personality test.

Trainees are then assigned an industrial psychologist from outside the company — their "office linebacker coach," in Palmer's words — who works with them on personal development issues and assigns homework. The third phase, which is being piloted now, involves mentoring from executives who work in other parts of the company.

PALMER: J.B. Hunt's training program uses industrial psychologists.

As part of the training, managerial candidates also take classes and engage in role-playing scenarios, often in front of actual managers. "When the senior leadership is watching, there is real risk and pressure," Palmer said.

Some companies don't give younger talent many opportunities to rise. For instance, out of the top 200 IT positions at Marriott International Inc., only three turned over in 2004, said Wendell Fox, Marriott's senior vice president of information resources field services in North America.

But that could soon change as the baby boom generation gets set for retirement. At Southern Co., an electric utility in Atlanta, the average age of the 1,000 IT workers is 47, and retirements can start as early as age 55, according to CIO Rebecca Blalock. She developed a two-year leadership program that recently graduated its first class. Three of the 24 graduates have already been promoted into management roles, Blalock said.

Bartlett, meanwhile, is now starting a leadership training program for all 800 members of the IT staff at TD Ameritrade.

"This is whether or not they want to become a manager," he said, "because really, everyone is a leader." ▶

GROOMING PROCESS

How are you working to develop the next generation of IT leaders?

56%	Mentoring my expected replacement.
45%	Implementing an in-house leadership development program.
43%	Rotating promising IT leaders through various jobs.
24%	Putting a formal succession plan in place.
23%	Working with universities to directly recruit graduates.

BASE: 162 Premier 100 honorees and registered attendees for last week's conference. The respondents were surveyed by *Computerworld* via the Internet last month. Multiple responses were allowed.

IT Managers Grasp For Global Reach

BY TODD R. WEISS
PALM DESERT, CALIF.

FOR MANY COMPANIES, going global with IT isn't a serene experience of hands-across-the-water teaming. Take Bausch & Lomb Inc., for example.

Historically, Bausch & Lomb's worldwide operations have been "very diverse," according to Steven Silverman, vice president of IT. The Rochester, N.Y.-based company currently has 24 different order entry systems around the globe.

But at the Premier 100 conference, Silverman said that Bausch & Lomb's CEO now wants the maker of vision-care products, surgical supplies and pharmaceuticals to develop common processes across all of its business units. That includes a plan to coalesce on a unified order entry system.

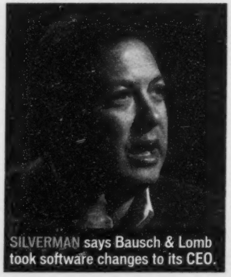
Silverman found that each of the company's local operations thought they required special software features. The company attacked the problem by asking teams from each division to bring a list of their requested modifications to the CEO and executive council. The initial total of 300 modifications dropped to about 150 just before the meeting, "and we walked out of the room with 100," Silverman said. "It's a good way to knock them out."

Other attendees at the conference, where Silverman took part in a panel discussion on making global IT work, recounted similar experiences.

Tom Halbouty, CIO at Pioneer Natural Resources Co. in Irving, Texas, said the energy consulting firm is trying to standardize applications in its operations around the world. But, he said, "you have to use products that are well supported in different countries." Sometimes that means one of Pioneer's first-choice applications turns out to be a bad fit. In such cases, the company continues running the local applications and massages them to work with its mainstream software. "We leave alone what we can leave alone," Halbouty said.

Cultural issues also can pose big challenges to IT managers. Frederick Danback, vice president of global technology architecture at XL Global Services Inc., said acquisitions made by parent company XL Capital Ltd. over the past few years left the insurance and financial services firm with 17 IT organizations in 30 countries.

XL Capital is based in Hamilton, Bermuda. But Danback, who works in Stamford, Conn., said his operation was largely a U.S. team before the buying spree. Then, he added, "there was a decree by corporate management that we will become one company, without cultural borders."



SILVERMAN says Bausch & Lomb took software changes to its CEO.

Making that happen has been a daunting process, said Danback, who took part in the panel discussion with Silverman. Danback noted that U.S. workers tend to move more quickly on projects than staffers elsewhere. After XL bought a company in Switzerland, "we found that in the Swiss culture, it's all about putting it all on paper first," he said.

In the end, though, the intermingling proved to be beneficial, according to Danback. "By bringing in all these other cultures," he said, "they gave us some discipline, and we gave them some agility."

Oliver Waite, director of global business systems at beverage maker Bacardi-Martini Inc. in Miami, said his U.S.-based IT team typically schedules project work in three-month chunks. But IT teams in Europe sometimes take much longer to analyze and plan projects.

"Certain countries do things better than others," Waite noted. "In the ideal world, you learn from each other." ▶

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–Ralph Szygenda, Group Vice-President and CIO

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AT DEADLINE

Nortel Again Forced To Restate Results

Nortel Networks Ltd., still smarting from earlier accounting scandals, must again restate its financial results to fix fiscal missteps. The restatement will force the company to delay the distribution of its 2005 annual report. Nortel, which is still the subject of U.S. and Canadian criminal and regulatory probes for earlier accounting troubles, said it expects to change its results for 2003, 2004 and the first nine months of 2005. The company previously restated its results for 2001 through 2003.

EU Plans to Consider RFID Legislation

The European Commission has initiated a public inquiry to determine whether to call for new legislation to regulate the use of radio frequency identification tags. As part of the inquiry, the EC will work with worldwide government and industry groups to agree on interoperability standards for RFID equipment. The effort comes as some consumers express fear that the technology can compromise privacy.

Microsoft to Issue Two Patch Updates

Microsoft Corp. will issue updates for its Office suite and Windows in its monthly patch release tomorrow. The Office patch was called "critical" and will include updates that may require that systems be restarted, the company said. The Windows patch was rated "important" and doesn't require rebooting, Microsoft said.

Novell Hires Lucent Exec to Head Unit

Novell Inc. has named former Lucent Technologies Inc. vice president Roger Levy as general manager of its Open Platform Solutions business unit. Levy replaces David Patrick, who Novell said is leaving to pursue other interests. Levy will report to Jeff Jaffe, executive vice president and chief technology officer.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

GRRR... WHICH KEY?
DID YOU TRY THIS ONE?
WANNA TRY MY DECODER RING?
DATA STORAGE
CIO

MATTHEW FAULKNER

Encrypting Stored Data Is Easy . . .

. . . but keeping track of the decryption keys is much trickier. Yet you'll need to do just that in the coming years if Barbara Nelson is right. "The challenge of the next decade is managing the security of data at rest," suggests the CEO of NeoScale Systems Inc. in Milpitas, Calif.

Information resting on tapes, CD-ROMs and other backup media is a snap to scramble so bad guys can't read it. More of you are encrypting stored data to comply with regulations such as California SB 1386, which is designed to protect consumers' personal information. But how do you know whether you'll be able to read the data when you need it later? In some cases, that may be decades into the future, such as with patient information you need to protect. Dore Rosenblum, vice president of marketing, claims that NeoScale's CryptoStor Key Vault appliance can, among other tricks, create encryption keys, distribute them off-site for business continuity, archive them safely for years, share them with trusted sources and delete them when necessary. Rosenblum says NeoScale has an open application programming interface so it can connect to any data-storage device and follows industry standards for encryption. The Key Vault will be available next quarter, he says, starting around $25,000. It could be a key to protecting your data.

NeoScale's CryptoStor Key Vault

Protect your end users . . .

. . . from themselves for free. In 2005, Gartner Inc. estimated that 2.4 million Americans fell prey to phishing attacks. A few of them may work at your company. Alex Hernandez, director of advanced product development at CipherTrust Inc. in Alpharetta, Ga., says his company this week is releasing a free tool-bar plug-in for Microsoft Outlook and Lotus Notes users that puts a red warning icon on messages from suspicious locations. Unknown sites will be flagged as yellow, and safe messages will be given a green light. The TrustedSource Toolbar queries CipherTrust's online database of Web sites that are known to be sources of spam, phishing attacks or other malware operations. Hernandez says a plug-in for Web mail clients will be ready "in a few months." Can't beat the price.

$929M

Gartner's 2005 estimate of U.S. consumers' loss due to phishing.

Open-source code is good . . .

. . . but not perfect. Coverity Inc. in San Francisco released its first analysis of the source code for 31 open-source projects — everything from popular software such as Linux, Apache and MySQL to lesser-known tools like Amanda for backup and the audio player XMMS. Ben Chelf, Coverity's chief technology officer, explains that the company's Prevent analysis product explores "all possible paths through the code" to look for defects. He says the flaws per 1,000 lines of code varied from .055 to 1.23. He concludes that the research is "good evidence that open-source software is generally of high quality." In an upcoming analysis of Linux, Coverity intends to analyze various releases of the operating system down to the individual driver level. Coverity has been chosen by the U.S. Department of Homeland Security to study open-source tools for potential security holes.

0.42

Average flaws per 1k lines of open-source code in Coverity analysis.

Vendors' shift to services . . .

. . . revenue continues apace. Thomas Lah, executive director of the Technology Professional Services Association in San Diego, says the 21 software and 16 hardware companies listed in the TPSA's Service 50 index continue to grow their services revenue faster than software license or hardware sales. He says the latest study from Q4 2005 shows that software companies now glean 60% of their dollars from services, while hardware firms are at 37%. "This is double the percentage of [services] revenue in both industries from 10 years ago," Lah says. He says the data underscores a shift in the way CIOs are evaluating technology vendors. That is, IT users want more than just features and functions. "They want to work with companies that can unlock the potential of technology with the right services," Lah says.

LAH: Vendors depend more on service dollars.

Estimate virtualization savings . . .

. . . with a free calculator. Application virtualization vendor Softricity Inc. in Boston is today releasing its Return on Virtualization Calculator gratis. David Greschler, vice president of corporate marketing, says the spreadsheet has been certified by market research firm Forrester Research Inc. Softricity worked with Forrester to design a step-by-step process by which you can calculate the difference between running software directly on PCs and handling applications virtually. For example, you can compare the difference in cost for installing and terminating programs in either fashion. Greschler is betting you'll see that the savings aren't virtual. ▸

GRESCHLER: Expect real savings from virtual tools.

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BRIEFS

Cisco Buys Sypixx In $51M Deal

Cisco Systems Inc. has agreed to acquire Sypixx Networks Inc. for $51 million in cash and stock. Privately held Sypixx is a maker of software and hardware that allow analog video surveillance systems to operate as part of an IP network. The acquisition is expected to close by April 28. The Sypixx products will become part of Cisco's Emerging Markets Technology Group.

HDS Promotes Roberson to CEO

Hitachi Data Systems Corp., a subsidiary of Hitachi Ltd., has named Dave Roberson to replace Shinjiro Iwata as CEO, effective April 1. Roberson is currently president and chief operating officer of HDS. He will retain the president's post. Iwata will assume the role of chief marketing officer at Hitachi Ltd.'s Information and Telecommunications Systems Group.

Brocade Buys NuView for $60M

Brocade Communications Systems Inc. has acquired NuView Inc. for $60 million in cash. NuView is a 6-year-old, Houston-based provider of network-attached storage management software. Brocade said the NuView software will be offered as part of the Brocade Tapestry suite of software that resides on its SilkWorm line of switches. NuView also provides a professional services operation to Brocade.

BMC Adds Suite for Small, Midsize Firms

BMC Software Inc. last week brought out a suite of products that target small-to-midsize businesses, a month after rival IBM released a similar tool called Tivoli Express. BMC's new IT Systems Management Express suite integrates the company's Performance Manager Express, Identity Management for .Net and Service Desk Express products.

Lack of Candor Heightens Public Concern About Debit Card Fraud

Credit card firms remain mostly mum about thefts

BY JAIKUMAR VIJAYAN

THE MYSTERY surrounding the source of a data compromise that resulted in an unprecedented wave of debit card fraud is fueling concern about the scope of the problem.

The incidents also shine a spotlight on what appears to be an increase in attempts by criminals to compromise PIN-based card transactions, which have long been considered very secure, analysts said.

The most recent furor was ignited last week when Citibank acknowledged that it had put transaction holds on an unspecified number of its MasterCard debit cards after detecting fraudulent cash withdrawals in Canada, Russia and the U.K.

In a statement, Citibank said that the fraud was the result of a "third-party business information breach" last year. To protect its customers, the company "blocked PIN-based transactions in those locations for the customers affected by the breach," the statement said.

A Possible Lead

A spokesman for the company refused to name the company that suffered the information breach, though a source involved with the investigation said evidence suggests that point-of-sale systems at a California store of retailer OfficeMax Inc. were somehow involved in the compromise.

The source, who requested anonymity, said that about 200,000 debit cards may have been compromised, though it's still not clear exactly how the card and PIN information was accessed and by whom.

Itasca, Ill.-based OfficeMax did not respond to repeated calls seeking comment.

Citibank, a unit of New York-based Citigroup Inc., is the latest in a fast-growing list of financial institutions that over the past several weeks have reissued thousands of debit cards or blocked access to certain transactions in countries where criminals used ATM cards to fraudulently withdraw cash and make purchases.

For example, the $13 billion North Carolina State Employees Credit Union in Raleigh over the past two weeks has reissued more than 27,500 debit cards since it was informed by Visa U.S.A. Inc. of a security breach involving a U.S. retailer.

Leigh Brady, senior vice president at the credit union, said many of the debit cards were used fraudulently in several countries, including Romania, Russia, Spain and the U.K.

The list of institutions reissuing cards also includes Bank of America Corp., Wells Fargo & Co., Washington Mutual Inc. and numerous credit unions.

In a report last week, Avivah Litan, an analyst at Gartner Inc., said that PIN-based fraud involves schemes in which hackers gain access to encrypted PIN data as it is sent along with card numbers to processors that execute debit transactions.

Last month, Rep. Barney Frank (D-Mass.) sent letters to MasterCard International Inc. and Visa urging them to disclose the source or sources of the compromise or face penalties.

In a statement e-mailed to *Computerworld*, Visa agreed that information about breaches should be sent to financial institutions but disagreed over whether the source of a breach must be identified.

Visa argued that financial institutions don't need to know the source of a breach to conduct a risk analysis of compromised accounts. "Accusing a single source of the compromise before the investigation is complete could be inaccurate and unfair," the company said.

MasterCard did not respond to requests for comment. ▸

Stealing Data

Tools and Techniques

- **PIN pad overlay:** Fake look-alike pad that fits over existing ATM pad and can capture PIN data without interfering with legitimate ATM transactions.
- **Card throat reader:** Fits over existing ATM card reader to skim card data without interfering with legitimate ATM transactions.
- **Key ghost:** Hardware placed inside point-of-sale systems to steal card-track data and PINs.
- **Internal ATM skimmers:** Electronics installed inside an ATM to capture and transmit card-track and PIN data.
- **Wire-tapping:** Bug placed on the communications line between ATM or point-of-sale system and processor to capture card-track and PIN data.

SOURCE: FAIR ISAAC CO., MINNEAPOLIS

Fingerprint Tool Guards Multimedia Content

BY JAIKUMAR VIJAYAN

Researchers at the University of Maryland have developed a digital fingerprinting technology that they say can better protect multimedia content from unauthorized copying and distribution.

The digital rights management technology works by embedding a unique ID or fingerprint on individual copies of multimedia content.

The tool includes special codes that can withstand so-called collusion attacks, in which multiple users conspire to electronically steal and distribute copyrighted material, said K.J. Ray Liu, professor of electrical and computer engineering at the university's A. James Clark School of Engineering.

Such attacks generally involve the theft of multiple copies of copyrighted material, such as a movie, that are pieced together in an attempt to dilute or erase the digital identities associated with each copy, Liu said.

"If you can find 100 people to collude together, you can reduce the fingerprint by 100 times, and nobody will be able to identify" the source of a leak or copyright infringement, he said.

The digital fingerprint technology is designed to resist such attempts at dilution, said researcher Min Wu, an assistant professor at the school.

The technology can be applied to images, video, audio and documents such as digital maps, according to the researchers.

Several companies have expressed interest in the technology, Liu said. The list includes Sony BMG Music Entertainment, which sparked a firestorm of controversy last year when its digital rights management technique was found to pose a security risk. At the time, Sony was forced to recall millions of music CDs.

"Sony is very interested in this and has donated over $120,000" toward equipment for a multimedia lab, Liu said. Others that have expressed interest include Hollywood movie studios and the U.S. Department of Defense, he said. ▸

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GLOBAL DISPATCHES An International IT News Digest

Australian State Signs Voice and Data Deal

PERTH, AUSTRALIA

AGGREGATING VOICE and data services under a new common-use arrangement with six preferred vendors is projected to save government agencies in Western Australia up to A$14.6 million ($10.7 million U.S.) annually, according to a state official.

Western Australia government agencies spent A$79 million on voice and data services last year.

In a presentation to government officials here, John Crowe, director of information technology and telecommunications for the state's Department of Treasury and Finance, said that the list of preferred voice and data service providers will eliminate the need for contract negotiations by individual agencies and should keep prices down. The program began on March 1.

Crowe said that the preferred voice providers are Bright Telecommunications in Perth; Macquarie Telecom Pty. in Sydney; Optus Networks, a North Ryde-based unit of Singapore Telecommunications Ltd.; and Telstra Corp. in Melbourne. Amcom Telecommunications Ltd. and Swiftel Communications, both in Perth, are the preferred data services providers.

■ RODNEY GEDDA, COMPUTERWORLD TODAY (AUSTRALIA)

Philippines Pushes IT Services Growth Plan

MANILA

PHILIPPINE Sen. Manuel Roxas III has proposed that the country create a five-year plan to expand its outsourcing reach from contact centers to larger and more advanced technology services providers.

Roxas told an audience at the e-Services Philippines 2006 CEO Forum here last month that his plan can help the country improve the technical skills of its workers. Providing an advanced workforce, he said, would persuade offshore firms to open facilities for more strategic activities, like software development and animation projects.

GLOBAL FACT

52%

The increase in the number of people arrested in Japan for Internet crimes during 2005 over the previous year. There were 3,161 arrested for such crimes last year, up from 2,081 in 2004.

SOURCE: JAPAN NATIONAL POLICE AGENCY

Roxas said the proposal calls on the federal government to "reconfigure" tax incentives given to foreign investors to ensure that those companies invest in education programs for their workers.

"The [Philippine outsourcing] industry needs to expand skill sets," he said. Workers need to be "more than just excellent in English and well acquainted with American culture," he added.

■ LAWRENCE D. CASIRAYA, COMPUTERWORLD PHILIPPINES

IBM Opens Hub for SOA Component Growth

BANGALORE, INDIA

IBM HAS set up a global hub here for creating and managing replicable software components based on a service-oriented architecture.

The Bangalore operation, called the Global Business Solutions Center, opened last month to oversee the creation of SOA-based components across 17 industries.

Matt Porta, head of the global business solution program for IBM Business Consulting Services, said the company plans to spend $200 million a year to develop and manage the components. Previously, the building of replicable components was overseen from several IBM locations worldwide, Porta said. "We decided that if we were going to get serious, we needed a global hub to manage all this," he said.

The center will work with about 60,000 IBM consultants and other resources worldwide on the conceptualization, development, maintenance and enhancement of the components, said Jeby Cherian, head of the Global Business Solutions Center.

The center's staffing level will depend on its projects, Cherian said. ▸

■ JOHN RIBEIRO, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

Freescale Semiconductor Inc. has acquired a 300,000-square-foot facility in Noida, India, to expand its design center there. With the new facility, Freescale will triple its Noida workforce to 1,500. Austin-based Freescale's Noida design center focuses on intellectual property development and system-on-chip design.

■ JOHN RIBEIRO, IDG NEWS SERVICE

The amount of malware coming from China rose 153% during the past six months of 2005, mostly from remote-controlled "bot" attacks emanating from that country, according to security software maker Symantec Corp. Rising Internet use in China, and a lack of precautions taken by new users, may be contributing to the malware jump, Symantec said.

■ ROBERT McMILLAN, IDG NEWS SERVICE

The German government's Research Center in Jülich last week unveiled Europe's most powerful supercomputer, an IBM Blue Gene system that will be used by European scientists to do environmental and particle physics research. The Jülich Blue Gene/L system supplants another IBM system, the Mare Nostrum blade cluster at the Barcelona Supercomputer Center, as the continent's fastest supercomputer.

■ JAMES NICCOLAI, IDG NEWS SERVICE

Maryland House Votes to Oust Diebold Machines

BY MARC L. SONGINI

The state of Maryland stands poised to put its entire $95 million investment in Diebold Election Systems Inc. touch-screen e-voting systems on ice because they can't produce paper receipts.

The state House of Delegates last week voted 137-0 to approve a bill prohibiting election officials from using AccuVote-TS touch-screen systems in the 2006 primary and general elections. The legislation calls for the state to lease paper-based optical-scan systems for the 2006 votes. State Delegate Anne Healey estimated the leasing cost at $12.5 million to $16 million for the two elections.

Healey, a Democrat, is the vice chairwoman of the Maryland House Ways and Means Committee, which recommended the passage of the bill. The bill was sent on to the state Senate for a vote after the House action, she said.

No Confidence

Healey said the effort was inspired in part by concerns raised by officials in California and Florida that the Diebold systems have inherent security problems caused by technological and procedural flaws.

"We've been hearing from the public for the last several years that it doesn't have confidence in a system without a paper trail," Healey said. "We need to provide that level of confidence going forward."

If the bill becomes law, the state's Diebold systems will be placed in "abeyance" and the vendor will be required to equip them to provide the necessary paper trail, she said.

Healey said the law would require the vendor to provide a paper trail before the 2008 elections or risk losing its contract to supply machines in the state. The bill also mandates that any leased optical-scan system be equipped to accommodate the needs of handicapped voters, to ensure compliance with the federal Help America Vote Act.

Healey said she expects the Senate to vote on the bill sometime in the next few weeks, before the legislative session ends.

A Diebold spokesman said the company will "work with the state of Maryland, as we always have, to support their elections as they see fit." He noted that Maryland has been using Diebold machines for several years without problems. The state first contracted with Diebold to provide the systems in January 2002.

Maryland is following in the footsteps of several other states in expressing concern over security flaws in the Diebold machines.

Earlier this month, Florida adopted a new set of security procedures for the use of e-voting systems from any supplier.

The implementation of the new procedures in Florida was largely a response to reports issued last month by California Secretary of State Bruce McPherson saying that tests found the Diebold systems vulnerable to external access via hacking or bugs.

Nonetheless, McPherson has granted conditional certification for the Diebold machines in California's elections — with the proviso that supervisors adhere to new security guidelines when using the gear. ▸

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BRIEFS

Microsoft Buys Migration App Firm

Microsoft Corp. has acquired Apptimum Inc., gaining technology that helps Windows users more easily migrate applications from old PCs to new ones. Terms of the deal were not disclosed. Apptimum makes the Alohabob PC Relocator tool, which allows users to transfer applications to new machines without having to reinstall them. The Apptimum's technology will initially be offered as an optional download for Windows Vista.

Atempo Acquires CDP Software Maker

Atempo Inc., a maker of data backup and recovery software, has acquired Storactive Inc., a privately held developer of continuous data protection software. Financial terms of the deal were not disclosed. Atempo said it will maintain Storactive's facilities in Marina del Rey, Calif., and Moscow. Prior to the deal, Atempo was a reseller of Storactive's LiveBackup and LiveServ products.

IBM, Cognos Sign SOA Tools Deal

IBM has signed a joint development and marketing pact with Cognos Inc. for service-oriented architecture products. The deal also calls for the two companies to continue work on integrating IBM middleware and Cognos business intelligence software, and to undertake additional vertical product integration projects.

SSA Buys Supply Chain Software Firm

SSA Global Technologies Inc. has acquired Provia Software Inc., a maker of order-to-delivery supply chain execution systems for small and midsize companies. The acquisition brings SSA Global an integrated Web services offering with warehouse management, order management, analytics, transportation management and radio frequency identification capabilities. Terms of the deal were not disclosed.

Continued from page 1

VoIP

technology before starting a three-year rollout to 60 sites in Michigan. The company is about halfway through the effort to replace 40,000 analog phones with VoIP phones from Cisco Systems Inc., according to Lemmer.

Allstate's BRUNE: "If your job is to take care of customers, [VoIP] is a technology for you."

In a keynote at the conference, Lemmer said the review included "detailed financial modeling" to determine return on investment. He would not comment on details of the review but said the "financial savings are on target."

PPL Corp. has saved more than $1 million annually on maintenance and toll calls with a VoIP system put in place two years ago, said Dave Stever, manager of communications technologies at the Allentown, Pa.-based supplier of electricity and natural gas.

In addition, Vantis Credit Union Ltd. in Winnipeg, Manitoba, projects that the installation of IP-based videoconferencing kiosks from Nortel Networks Ltd. in eight remote offices over the next two months will boost annual revenue by 15% to 20%, said CEO Michel Audette. The kiosks will enable customers in remote offices to discuss business with officials in other facilities, and also reduce the need for staffers in the remote offices, he said.

Process Over Telephony

Despite such examples, Peterson said, "we don't believe IP telephony is a cost-reduction case. I fundamentally believe that the real value is how it changes the business."

Some IT managers agreed with Peterson that process improvements stemming from VoIP can be substantial.

Catherine Brune, CIO at Allstate Insurance Co. in Northbrook, Ill., said VoIP helped her company quickly set up emergency trailers in the field to help with claims filing and to easily transfer calls to call centers hundreds of miles away in the aftermath of Hurricane Katrina.

"This technology can enable a different business process," Brune said. When the network near New Orleans failed after the storm, Allstate was able to move to another carrier within 24 hours, thanks to the flexibility of VoIP. "If your job is to take care of customers, this is a technology for you," she said.

Brune did say that start-up costs may prevent IT managers from making a persuasive business case to get approval for funds to start a VoIP deployment. She suggested that managers use internal resources to prove the business value and then seek more funding later on.

Gary Bixby, director of support services for the school district of Cheltenham Township in Elkins Park, Pa., credits a new Alcatel VoIP system with significantly improving the district's emergency preparedness process. Teachers can be discreetly informed of an emergency, such as an intruder in the school, over a graphical display on IP telephones, he said.

Bixby began researching VoIP more than a year ago and has so far deployed about 300 IP telephones. The district will eventually deploy twice that number in a project expected to cost it about $300,000.

HALTOM: Productivity at Erlanger Health System has improved since moving to IP telephony.

In the future, the school district hopes to use Alcatel's IP telephony to interface with Session Initiation Protocol-based videoconferencing technology, which would be invaluable for distance learning, he said.

Another Nortel customer, Erlanger Health System in Chattanooga, Tenn., has seen productivity gains since moving to IP telephony, because nurses can now respond quicker when a patient needs assistance, said John Haltom, network manager at the health care provider. Erlanger has 1,500 IP phones, about 20% of the total it plans to deploy, he said.

Peterson's argument that improving business processes should be the primary reason for using VoIP did not surprise Zeus Kerravala, an analyst at Boston-based Yankee Group Research Inc.

"Peterson is absolutely correct," he said. "Business productivity is what you have to focus on. You get more bang for your buck by focusing on productivity than cost reduction."

Kerravala said the larger the organization — and the implementation — the smaller the savings.

"In a very large organization, in fact, going to VoIP could be more expensive," he said. ▸

Disasters Proving Mettle of IP Communications

AN IP-BASED communications system built into a rescue vehicle supplied by Anne Arundel County in Maryland is credited with helping to improve communications in New Orleans during the dark days after Hurricane Katrina.

The county designed the high-tech package for the vehicle last year. The work was completed just three weeks before the hurricane hit Louisiana, said Dave Chapman, president of Upperco, Md.-based Chapman Consultants LLC, which served as the integrator for the IP technology used in the vehicle.

Chapman discussed the vehicle's Katrina performance during a roundtable discussion on disaster preparedness at VoiceCon Spring 2006 in Orlando last week.

The IP technology in the vehicle, supplied by Arinc Inc. in Annapolis, Md., helped make 17 different radio and communications systems interoperate after the storm.

The vehicle was sent to Jefferson Parish, La., to provide communications support for walk-in medical clinics, according to Chapman.

Anne Arundel County officials designed the vehicle to be a communications hub in the event that the county's emergency operations center became unavailable.

The communications system was designed to be interoperable with those of any agency in Maryland, as well as with those of jurisdictions bordering the state, Chapman said.

"It operated flawlessly for more than three weeks in Louisiana, all on generator power," he said.

Chapman said the Anne Arundel success story is just one example of how IP technology can provide the "common language" needed to provide communications interoperability across many thousands of jurisdictions in the U.S. for first responders.

Users attending the *Computerworld* Premier 100 conference last week in Palm Desert, Calif., added several more examples during a panel discussion.

Greg Meffert, chief technology officer and CIO for New Orleans, said that although half the city remains without working land lines more than six months after Katrina, VoIP-enabled networks have been operating since a few days after the storm.

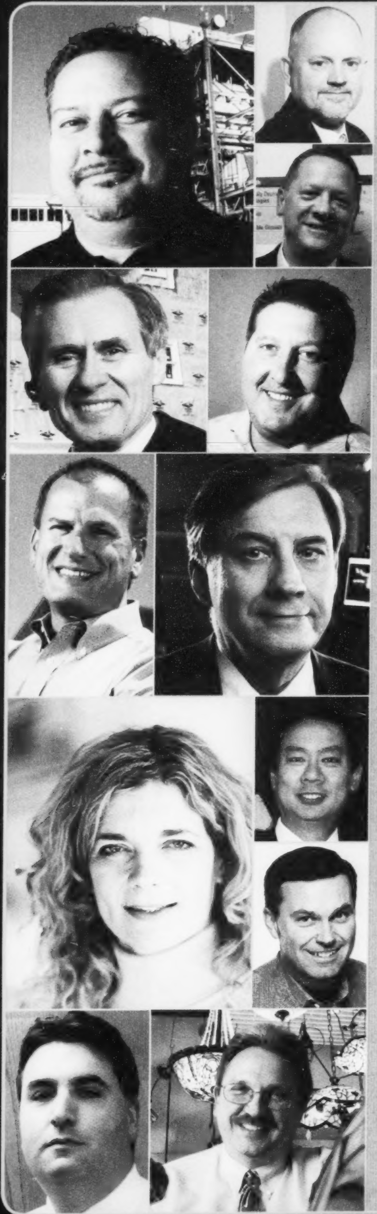
Meffert said some workers at New Orleans City Hall had started using VoIP phones before the deadly storm hit on Aug. 29. The city has since been expanding the technology's use, he said.

Jan Rideout, CIO at Northrop Grumman Ship Systems, which has facilities in the New Orleans area, said that before the storm, the company had a three-year plan to install VoIP and wireless networks. That rollout has since been accelerated to 18 months.

"It's a big part of our recovery, and we believe it's the way to go," Rideout said.

Chapman said governments in the U.S. "could quickly, in a matter of months, convert to IP-based technology for emergency responders. The real question is political and budgetary."

– MATT HAMBLEN AND PATRICK THIBODEAU



These 12 IT leaders took their high-impact projects to new levels, delivering customer value, cutting operational costs and pushing the bounds of technology.

100 PREMIER IT LEADERS 2006

BEST IN CLASS

An editorial
supplement to
COMPUTERWORLD
MARCH 13, 2006

Find out how we helped a major technology vendor update its customer support systems to keep up with several years of steady sales growth.

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EDITOR'S NOTE

Stop&Think

IN A society of instant messaging, channel surfing and fervent multitasking, it's clear that we want to ponder less and skim more. That's why this year's Best in Class honorees are such a refreshing change of pace.

Ellen Fanning is special projects editor at *Computerworld*. You can contact her at ellen_fanning@computerworld.com

It's true that IT executives are charged with making fast decisions and delivering immediate results. And these Best in Class honorees have the required agility. Yet they won't rush essential thinking.

Take, for example, Paul Mueller at Schneider National. For almost 10 years, he held on to the idea for a tracking system that would pinpoint the whereabouts of the truckload carrier's trailer fleet. It wasn't until 2003 that Mueller felt the technology was ready and the time was right. His research and patience paid off — Schneider is now saving millions of dollars with its multimode cellular technology.

At Southwest Airlines, Tom Nealon's IT department spent much of the first year of its GateReader project developing the application. The team created a prototype of the bar code scanning devices and met with the gate agents who would use them. The result was a tool that was worth the wait — easy for agents to use and a boon to travelers.

Or consider Kay Palmer at J.B. Hunt, who put the brakes on a project to consolidate more than 150 customized PC-based applications after the company had invested more than $2 million. With mounting technical and project management challenges, Palmer decided it was time to pause and reevaluate. The cautious approach proved wise: With a fresh start and business needs better defined, the project was put back on track. The company says it expects a seven-year return of $87 million.

Now in its fifth year, *Computerworld*'s Best in Class awards honor leaders like these. They are a subset of the 2006 Premier 100 honorees who are being recognized for creating business value through innovative technology projects.

To choose this year's 12 winners, a panel of judges and *Computerworld* editors evaluated many worthy candidates (see page 23). We focused on projects that had measurable payback, strategic importance to business, substantive customer impact, and new revenue or costs savings.

It's not your average IT executive who can pause amid the chaos to reflect on the merits — and defects — of a project. These 12 award winners were able to do that, and we hope their stories inspire you to do the same. ▶

ONLINE

Learn from the best

Premier 100 IT Leaders past and present converged in Palm Desert, Calif., last week at the seventh annual Computerworld Premier 100 IT Leaders Conference. For news coverage from the event, visit our Web site at www.computerworld.com.

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100 PREMIER IT LEADERS 2006

Best in Class

4 **Long-Haul Journey** Tracking units pinpoint the precise location and transit status of Schneider National's trailer fleet.

8 **Bright Idea** A business-to-business portal at Kichler Lighting reduces customer call volume by more than 300 calls per day.

9 **Gate Cruisers** New bar-coded boarding passes allow Southwest Airlines agents to check in each passenger in a split second.

10 **Up to Code** The city of Norfolk, Va., uses business process management software to automate residential and builder permit applications.

12 **Welcome Wagon** Long & Foster builds a transaction management system from scratch, increasing its stake in the corporate relocation market.

14 **Cash Flow** Quest Diagnostics' billing system replaced hundreds of mainframe-based data files and programs.

15 **Lease Leader** Rent-A-Center gets a handle on an unwieldy lease management system and gains project management techniques to boot.

16 **Bumper Crops** 1-800-Flowers.com's global load-balancing strategy distributes traffic more evenly among its data centers.

17 **Picture Perfect** Rockford Health's picture archiving system digitizes the results of imaging exams, promoting more collaboration on diagnoses.

20 **A Better Bill** J.B. Hunt's centralized system for payroll and billing has produced more-comprehensive invoices.

21 **Technology Trailblazer** American Modern Insurance Group's $62 million system overhaul includes a new service-oriented architecture.

22 **Circuit Breaker** Austin Energy's automated meter-reading system has eliminated about 120,000 on-site meter reads.

SCHNEIDER NATIONAL INC.

www.schneider.com

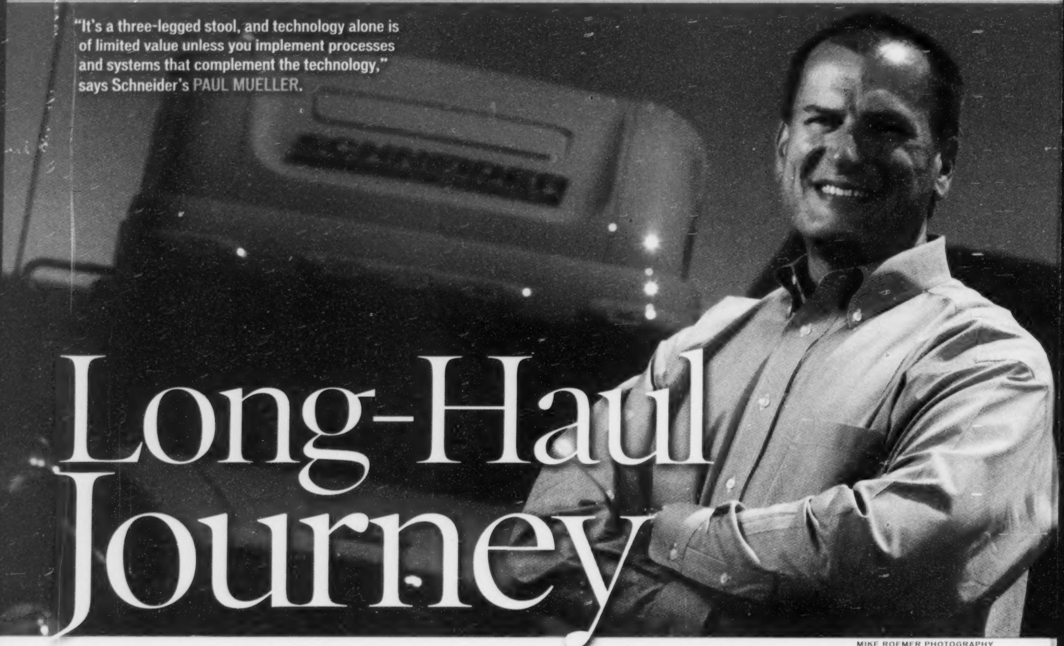
2006 Award Winner

BUSINESS: Founded in 1935, this provider of truckload and intermodal services is based in Green Bay, Wis., and is North America's largest private truckload carrier. The company has a fleet of 14,000 tractors and 48,000 trailers with 36 locations throughout North America and serves two-thirds of the Fortune 500. The company had revenue of $3.5 billion in 2005.

IT DEPARTMENT: 425 employees

PROJECT CHAMPION: Chris Lofgren

PROJECT PAYBACK: A new system for tracking trailers yielded millions of dollars in reduced expenses, increased customer satisfaction and streamlined driver communications.



"It's a three-legged stool, and technology alone is of limited value unless you implement processes and systems that complement the technology," says Schneider's PAUL MUELLER.

Long-Haul Journey

MIKE ROEMER PHOTOGRAPHY

TRACKING UNITS PINPOINT SCHNEIDER'S TRAILERS WITH REAL-TIME ACCURACY

BY MARY BRANDEL

PAUL MUELLER at Schneider National Inc. still hangs on to a dog-eared copy of a 1993 article from *Fortune* magazine given to him by then-president Don Schneider. The article discussed tracking technology that was under development for the ocean-liner industry that enabled cargo to signal its whereabouts. Handwritten across the top of the page were the words, "Too costly, but right concept."

Thirteen years later, the concept is now a reality at the largest private truckload carrier in North America. Schneider has installed close to 30,000 tracking units in its freight trailers, which enables the company to use wireless communications, global positioning technology and battery-operated sensors to pinpoint the precise location and transit status of its trailer fleet, including whether trailers are loaded or empty. Today, Schneider is one of the largest commercial fleets in the world to have installed this technology.

"We can now accurately pinpoint the location of company trailers in real time — a seemingly obvious operating procedure to the outside world and yet a major, ongoing challenge for transportation companies worldwide," says Mueller, vice president of technology services at Schneider.

It's no wonder that Schneider had an early interest in developing an automated method of tracking its trailers: In 1988, the Green Bay, Wis., company was a pioneer in implementing a two-way wireless satellite communications and positioning system for its 14,000 tractors.

"Prior to that, drivers would stand in line at a pay phone and wait on hold to talk with a dispatcher when they had questions or concerns," Mueller says. Today, more than 5 million messages travel over the network each month.

But in addition to its tractors, Schneider also owns 48,000 trailers that at any point in time could be traveling on a flatbed rail car somewhere in North America or behind a Schneider tractor or one owned by a third-party carrier. A trailer could even be sitting in a yard waiting for loading or pickup.

Until recently, gathering information regarding the whereabouts, status and condition of these trailers was a completely manual process.

"As you can imagine, the accuracy and efficiency of those processes were really unsuitable to efficiently managing the fleet," Mueller says. "These are revenue-generating assets, and if you don't have good data, you're making bad decisions."

For instance, poor data can result in dispatching trailers to suboptimal locations, undermanaging trailer pools, using driver and administration resources inefficiently or making late pickups and deliveries — all of which can increase driver frustration and lead to high turnover.

The Experiment Begins

So in 1995, Schneider began to research its options, working with several vendors over an eight-year period on various wireless-based systems. Finally, in 2003, it joined with Qualcomm Inc. to develop a system based on multimode cellular technology. The goal was to create a battery-operated system that used cellular communications and Global Positioning System technology to track trailers with a high degree of precision.

In developing the system, the team faced many challenges. One was power — unlike the tractor system, there's no access to power once a trailer is disconnected from a truck. "It had to be wireless but also operate for at least 30 days on battery power," Mueller says. The solution was to use a battery pack that recharged when the trailer was hooked to the tractor.

Another issue was the need for a cargo status monitor, since Schneider needed to know not only whether trailers were empty or loaded but also when such a transition took place. The team developed an ultrasonic device that uses sound waves sent into the trailer to sense when the load or unload event has occurred.

A third challenge was to be aware of when a trailer was hooked or unhooked from a tractor or was lifted onto or off of a railcar. With Qualcomm, Schneider developed a ferromagnetic sensor that alerts it when those events occur.

"That was an area where we hadn't had a lot of experience," acknowledges Mike Segal, director of corporate accounts at Qualcomm. "But they had ideas and prototypes, and we took that design and improved on it; it was a very iterative process."

To install the system, not only did the team have to take the trailers out of commission, but it also had to do it when the trailers were loaded, which meant cutting and drilling through a steel plate and the aluminum body of the trailer without disrupting the load. "If we attempted to only install on empty trailers, it would have elongated the project multifold," Mueller says.

Because of Schneider's dedication to the development process and its willingness to commit resources to the project, the job got done. "They're as much a software company in my mind as anything else," Segal says.

Well Worth It

The benefits of the system are just beginning to be realized. For instance, Mueller anticipates a "dramatic increase" in the utilization of Schneider's trucks, trailers and drivers, in addition to millions of dollars in reduced expenses. Savings can be attributed to improved visibility into the status and location of trailers, and easier track-and-trace processes.

The end results for clients include more-accurate delivery times, improved customer service, better use of company assets and more-efficient freight routes. In a survey conducted by Schneider, 44% of customers said they would reward a carrier with such capabilities with more freight.

But getting the technology right is just the beginning. As the Qualcomm system becomes an established industry standard for U.S. freight carriers, competitive differentiation depends on taking the new data and using it to improve business processes.

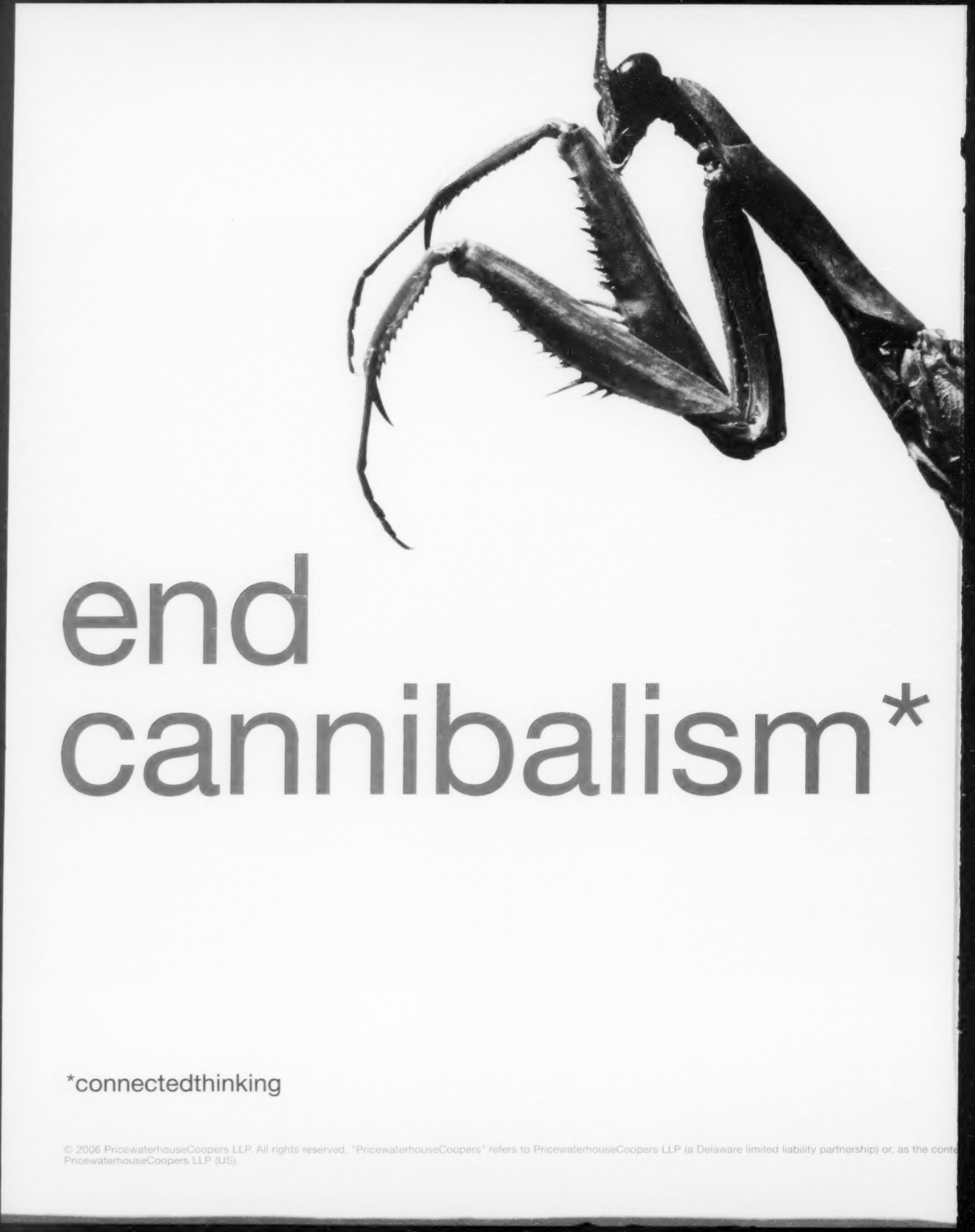
"It's a three-legged stool, and technology alone is of limited value unless you implement processes and systems that complement the technology," Mueller says. "The magnitude of success of this investment is dependent on our ability to be creative and effective with the data."

This attitude is a strength of Schneider's, Segal says. "Schneider has a more mature perspective on that than its competitors," he says. "They get the whole picture and aren't just looking for the magic widget all by itself."

For instance, Schneider has begun coding many of the locations it works out of to automatically collect information on arrivals and departures.

"This is one of those journeys that never ends," says Mueller. "We'll continue to find new ways to use the data and build new systems and tools around it." ◗

Brandel is a Computerworld *contributing writer. Contact her at marybrandel@verizon.net.*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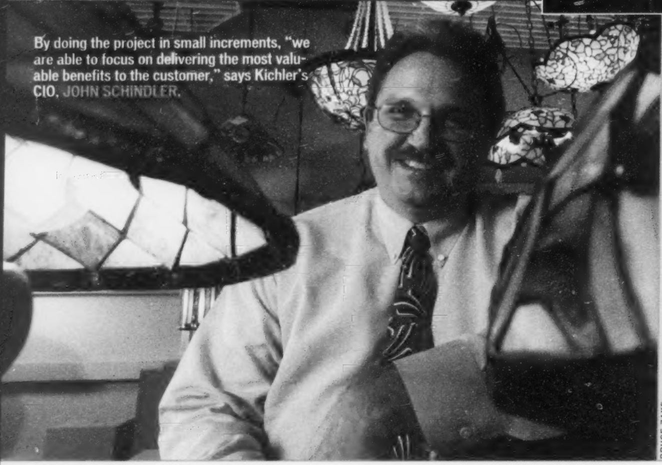


By doing the project in small increments, "we are able to focus on delivering the most valuable benefits to the customer," says Kichler's CIO, JOHN SCHINDLER.

BRUCE ZAKE

KICHLER LIGHTING CO.

www.kichler.com

BUSINESS: The privately held lighting manufacturer sends more than 1,000 shipments daily to showrooms, electrical distributors and building contractors.

2006 Award Winner

IT DEPARTMENT: 27 employees

PROJECT CHAMPION: John Schindler

PROJECT PAYBACK: Kichler is now able to provide round-the-clock self-service, and it has reduced the number of customer service calls by more than 300 per day.

Bright Idea

KICHLER LIGHTS UP SALES WITH BUSINESS-TO-BUSINESS PORTAL

BY DREW ROBB

IT HAS been more than a century since Thomas Edison produced his first light bulb, and the industry he helped create still uses some of the same technology. Slow to change, too, has been the business end. For example, three years ago when Kichler Lighting Co. looked at creating a business-to-business portal, the family-owned company that opened during the Great Depression found that more than half its customers didn't have e-mail. But Kichler was growing rapidly, so to better serve its clients without adding more staff, it went ahead with the project.

"We were asked to reduce the call volume by 200 per day," says CIO John Schindler. "We met that and are now eliminating well over 300 calls per day."

Getting to that point, however, wasn't easy. None of Schindler's staff had ever worked on a portal project. "I started out with zero knowledge in the area, just a concept of what I wanted to accomplish," he says. "We had to determine how to leverage the BEA environment, manage the content and get an LDAP environment in place to support the role-based security we were building into the system."

Kichler hired Cleveland-based Brulant Inc. to help design the creative aspects of the site, including navigation.

"The biggest job was defining the processes rather than setting up the technology," says Scott Young, a senior vice president at Brulant who oversaw that company's end of the project. "We took a process that was manually intensive and was done internally, and we created a system that enabled their distributors to enter their own orders."

Business systems analyst Paul Chema acted as project manager within Kichler and was responsible for determining the portal's functionality and writing the specifications.

"Rather than taking a big-bang approach, we are releasing these pockets of functionality," says Schindler. "By doing it in small increments, we are able to focus on delivering the most valuable benefits to the customer rather than overwhelming them with huge feature sets."

Kichler releases new versions of its portal, The Kichler Connection, twice a year. The initial release included three key functions: order entry, order status and product availability. The data comes from a PeopleSoft 7.5.2 ERP (currently being upgraded to 8.9) coupled with a BEA Systems Inc. WebLogic 8.1 development platform. A later addition to the system allowed customers to generate custom price lists for their showrooms and download them in XML format or as Excel spreadsheets. Each customer has its own site administrator who decides each user's access. The site was a big success and now has close to 3,000 registered users, with between 50 and 100 users added monthly.

Phase 4 of The Kichler Connection went live in January. It includes a digital asset management system, where customers can select and download graphics in five formats.

"This will help reduce the delay and costs of manually delivering catalog and advertising images to our clients," says Schindler. "It is the culmination of two years of effort and is a significant deliverable to our business community."

"We have a lot of projects going on here and are chunking them off every six months," says Chema. "We have a big future ahead of us." ▸

Robb is a Computerworld *contributing writer.*

Gate Cruisers

BAR-CODE PASSES AT SOUTHWEST AIRLINES KEEP PLANES MOVING

BY MARY K. PRATT

SOUTHWEST AIRLINES Co. transports thousands of people daily. That's thousands of boarding passes handled by gate agents trying to get people on the right planes so those planes can get off the ground.

Southwest had used plastic color-coded boarding passes to do the job, but airline officials wanted a more sophisticated system that could quickly provide passenger data.

"We wanted a low-cost solution that was very quick to scan and was very easy to execute," says Jan Marshall, Southwest's technology leader responsible for the applications portfolio.

That solution? An application called GateReader.

Southwest now issues bar-coded boarding passes that allow agents to check in each passenger in a split second while gathering important data that helps keep people and planes moving.

Helane Becker, managing director at The Benchmark Co. in New York, says the GateReader system was a needed addition at Southwest.

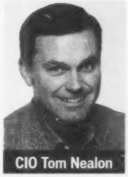
"The goal is to keep the turnaround time as short as possible, to get people on board and get the plane off," she says. "That's how [airlines] make money. And to do that, the GateReader is very helpful."

Initial designs, however, weren't going to deliver the speed required for the system to be successful, says senior vice president and CIO Tom Nealon. So shortly after he arrived as CIO in mid-2002, Nealon halted the GateReader project to reassess its design points to make it faster.

Southwest spent most of 2003 developing the application, Marshall says. The company rolled out the devices between September and November of that year, and 372 GateReaders are now in 62 airports across the country.

About 50 workers developed the application, which is built within a service-oriented architecture using C++ and a Java Swing front end. The messaging middleware uses CORBA, and the application runs on a Solaris system with network-attached storage.

"It was the first project that we had that service-oriented layered architecture, so it was the first one where we involved a lot of different groups to bring one product to Southwest," Marshall says, adding that the technology group worked in silos prior to the GateReader project. But, she says, the process showed that "we could build software solutions faster if we worked as a team. The biggest thing we learned as teams is to trust other teams for the deliverable of a product we felt responsible for." Much of that success came from fostering trust through team meetings, communication across teams and cooperation between leaders, according to Marshall.


CIO Tom Nealon

Robert Shaffer, senior director of technology, says that same approach was carried through from design to training. Designers, for example, talked with gate agents when building the workstations that house the GateReader devices to determine best placement of the keyboard, the desktop surface, the phone and the like.

"We did a lot of prototyping and brought agents in to try it and give feedback," Shaffer says. The end result is a system that handles more information in less time than the prior boarding-pass system.

"It's a great tool, something we needed years ago," says Chris Abbott, a project analyst who until last year was an operations supervisor who oversaw boarding agents.

Abbott says agents can quickly learn, among other things, who is on board, where they're heading, who has yet to board, whether they're on arriving planes and what time those planes are arriving. This readily available information helps agents not only greet passengers by name but also make better decisions, such as whether they can wait for missing passengers arriving from connecting flights. ▸

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

SOUTHWEST AIRLINES CO.

www.southwest.com

2006 Award Winner

BUSINESS: Southwest Airlines is headquartered in Dallas. It reported $6.5 billion in total operating revenue in 2004.

IT DEPARTMENT: Its technology organization had 890 employees and 120 contractors in 2005.

PROJECT CHAMPION: Tom Nealon

PROJECT PAYBACK: The company spent about $4 million to develop and implement its GateReader system in 2003. Southwest hasn't calculated a return on investment, but it says the system allows its agents to be quicker and more efficient while providing better customer service, because they have more information about passengers readily available.

CITY OF NORFOLK, VIRGINIA

www.norfolk.gov

2006 Award Winner

BUSINESS: This municipal government with 5,000 employees serves a city with nearly a quarter of a million residents, the world's largest naval base and the East Coast's second-largest shipping container terminal. Norfolk has an $882 million budget for fiscal 2006.

IT DEPARTMENT: 126 employees

PROJECT CHAMPION: Hap M. Cluff

PROJECT PAYBACK: The average time to process building permits was cut from 19 days to three. Citizens no longer have to spend six to eight hours per application chasing forms through the approval process, saving 100,000 man-hours on 14,000 applications annually. The city has more than 5,000 forms left to automate.

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HAP M. CLUFF, IT director for the city of Norfolk, Va., says the old time frame for building-permit approval – 19 days, on average – "was not a good way for the city to do business."

Up to Code

NORFOLK, VA., BUILDS A BETTER PERMIT PROCESS WITH BUSINESS PROCESS MANAGEMENT

BY DREW ROBB

MUNICIPAL governments enjoy monopolies within their city limits, but that doesn't mean they can get by with giving bad service. Right next door is another city that's more than willing to bring in new businesses and the accompanying tax revenue.

"We wanted our permitting process to be better than anyone else's, since it was the only way we could compete in our highly competitive region," says Hap M. Cluff, director of IT for the city of Norfolk.

The problem was that it took 19 days, on average, to get a permit approved. Residents and builders had to make multiple trips downtown to chase applications through departments scattered among six different buildings. Citizens complained about the wasted time and lost applications.

"This was not an acceptable time frame for something as simple as a driveway or a patio or a single-family dwelling," Cluff says. "It was not a good way for the city to do business."

The obvious answer was to use business process management (BPM) software to automate the process.

"A lot of government agencies aren't worried about revenue but about saving costs, and it will make people more productive to have managed processes in place," says Colin Teubner, an analyst at Forrester Research Inc. in Cambridge, Mass. "They also want to provide better customer service to their constituents the way Norfolk did, by lowering the permit cycle time."

Sharing the Load

But there was a lot more than just building permits that needed automation. The city has more than 5,000 paper forms, and even doing one a week would stretch the task out into the next century. And there was no money in the budget to hire consultants to take over the job. Norfolk needed a framework for IT to push the automation out into the hands of those who use the forms.

In order to economically automate its numerous processes, the city decided to use existing software and personnel.

Norfolk already had a license for eWork BPM software from Metastorm Inc. in Columbia, Md., which could be used to automate any number of processes. Cluff then created a bureau within IT called eAccess and Process Automation. The bureau's initial target was to tackle the permitting process, which it did within the first 90 days.

With the cycle time being cut down from weeks to days, however, associated activities also needed to be sped up. For example, it used to be that street addresses weren't assigned to vacant lots by surveyors until after the submission of a building permit application. Now those are assigned ahead of time and entered into an ESRI Inc. geographic information system database so the permit staff can enter the data into the electronic forms. It was easy to adjust the electronic processes as needed.

"The citizens, for example, were not used to getting their permits this quickly, so they didn't bring their checkbooks with them to pay for the permits," says Mary White, office automation supervisor. "We had to quickly create a stage to freeze the process until it was paid, but because it was an in-house process, we were able to put that in in a matter of minutes."

Since the successful deployment of the new permitting process, the city has automated other processes, including its vendor applications, which it reduced from four days to one hour, and its voice adds/moves/changes, a complex procedure involving 34 departments.

Hundreds of other projects are in the queue throughout the city's operations, with thousands more to follow. But the work isn't all being done by IT.

"The best part of it is we have abandoned the old, traditional approach where IT owned and controlled everything," says White. "Now we have customers taking responsibility for their own training, marketing, and documentation of their eWork processes." ▸

Robb is a Computerworld *contributing writer.*

LONG & FOSTER REAL ESTATE INC.

www.longandfoster.com

2006 Award Winner

BUSINESS: Founded in 1968, Long & Foster is the largest privately owned real estate firm in the U.S., with $44.6 billion in sales in 2005.

IT DEPARTMENT: 96 employees

PROJECT CHAMPION: Michael Koval

PROJECT PAYBACK: The company has improved its ability to attract large clients, along with its competitive positioning.

Welcome Wagon

HOMEGROWN SYSTEM HELPS LONG & FOSTER MOVE FURTHER INTO RELOCATION MARKET

BY MARY BRANDEL

LONG & FOSTER Real Estate Inc., the largest privately owned real estate firm in the U.S., made the strategic decision two years ago to increase its presence in the lucrative corporate relocation industry. But company executives knew they couldn't even attempt such a move without an application to support it.

Clients today expect relocation service providers to come to the bidding table with a system that not only supports relocation activities but also enables clients and transferees to access it.

"You win or lose in many situations based on the technology you have," says Nancy Sudduth, senior vice president at Long & Foster. "We're talking about having a ticket to compete."

"We'd potentially have to bail out of the bidding process if our systems couldn't meet the client's requirements," says Michael Koval, CIO at the firm.

But with no off-the-shelf application available, that meant building the software from scratch — which, considering the complexity of managing the relocation process, was no easy undertaking.

And yet today, 100 Long & Foster employees in five locations are managing hundreds of millions of dollars annually in relocation transactions via Pegasus, which offers clients and sales associates a 360-degree view of the customer, client, corporation and any vendor associated with a move.

The system was built using the Microsoft .Net Framework running on a clustered farm of Dell quad-processor servers.

Pegasus not only gets Long & Foster and its third-party corporate relocation company, Vision Relocation Group LLC, in the door with relocation clients, but it has also helped it win some significant contracts.

A major factor in the system's success, Koval says, was the tight collaboration between IT and senior business users. That's because managing the relocation process means abiding by intricate, complex and ever-changing business rules. Consider that different clients have widely diverse contract terms, workflows and policies that can vary for each of its transferees.

"Let's say a transferee is working for a large corporation whose policies provide home-buy and home-sale services, help with temporary housing, and movement of household goods," explains Brenda Dunn, project manager of Pegasus.

But within an individual transferee's contract, the company might not offer temporary housing. So the system needs to be able to set up the transferee's record, assign the appropriate policies to it and control all future transactions for that transferee according to those policies.

"So if someone tried to add temporary housing to that transferee and it's not on the policy, they couldn't do it," Dunn says.

Mistakenly adding that benefit would be an expensive error, since the service provider would have to eat the cost. "You could kill the entire bottom line on a couple of moves for the entire year," Koval says. "It's vital to have a system that maintains and controls what's stated in the policy and what's contractually obligated."

The system also needed to help the organization accurately project costs for group moves, document costs and manage to-do lists for relocation specialists.

Maintaining Flexibility

Long & Foster expected Vision Relocation Group to continue growing while the system was being built — which called for a highly flexible and scalable system.

"Our industry seems to change hourly, so it's difficult to anticipate what five years will bring," Sudduth says. "But we wanted IS to build something flexible enough that we could add to it and make adjustments."

All of this meant long sessions for Dunn and five business directors, doing everything from joint application-development sessions to requirements gathering, screen design, workflow approval and even field naming.

"These were people working hours each day, who'd never done anything like this before, and then hurrying back to do their jobs," Sudduth says.

Dunn quickly found that because of the users' unfamiliarity with the development process, she had to change the usual means of gathering requirements. She came up with a methodology in which she created system prototypes while the users discussed their requirements, using Microsoft FrontPage and an overhead projector to show the screens she was building. "I'd launch the page and test-drive it with them to ensure everything looked OK," Dunn says.

She would then create the documentation to support that screen and pass it along to the programmers — in this case, offshore programmers. Because of the time and budget constraints, Long & Foster opted to work with an India-based company for development.

That introduced its own complexities. U.S. real estate is completely different from its Indian counterpart, which meant lots of time spent explaining real estate concepts.

"We stipulated that they had to spend some time here to understand how the business operates," says Mayur Raichura, managing director in Long & Foster's information services department.

But the devil was in the details. For instance, one screen asked transferees to indicate whether they had pets, how much they weighed and whether they were declawed.

"It was just a foreign concept to them," Dunn says. "We spent an hour explaining the concept of declawing and why it was important for someone managing temporary housing."

Managing the back-and-forth communication with the offshore company was also a big job, considering time differences.

"We would work out requirements, and Brenda would communicate them with the offshore programmers," Sudduth says. "They'd work while we were sleeping, and she'd have them ready for us the next day."

And requirements continued to change even while the system was being built. "The housing market was on a tear, and complexity just grew," Raichura says. "There were new requirements we'd never dreamed of because of new clients."

Another complication was that the system brought together several very different disciplines — including the affinity program, the national referral service, the corporate assets division and a third-party buyout company — under a common umbrella. "They had different ways of looking at things but needed a universal way," Dunn says.

The system has been successful so far, and there are still more benefits to be borne out. The company holds weekly meetings where users can share ideas on how they're using Pegasus, such as for ad hoc reporting. And most important, it has proved crucial to Long & Foster's success in the relocation business.

"It has opened doors to us for RFPs that we were not eligible for before," Sudduth says. ▸

Brandel is a Computerworld *contributing writer. Contact her at marybrandel@ verizon.net.*

" It's vital to have a system that maintains and controls what's stated in the policy and what's contractually obligated.

MICHAEL KOVAL, CIO, LONG & FOSTER REAL ESTATE

QUEST DIAGNOSTICS INC.

www.questdiagnostics.com

2006 Award Winner

BUSINESS: Quest provides clinical lab services for medical centers, other labs, companies and government agencies. It operates more than 1,900 patient services centers and 30 primary labs. Revenue for 2004 was $5.13 billion.

IT DEPARTMENT: 1,500 employees

PROJECT CHAMPION: Mitchell Hansen (right)

PROJECT PAYBACK: Quest's billing system replaced legacy platforms, resulting in huge cost savings. The system helped Quest reduce its dependency on clearinghouses, improve data quality, eliminate steps in the billing cycle and meet Health Insurance Portability and Accountability Act requirements for completing insurance billing transactions in a standard format.

Cash Flow

EDI CLIPS COSTLY STEPS FROM QUEST'S PAYMENT EXCHANGE CYCLE

BY BOB VIOLINO

A BILLING PROJECT helped Quest Diagnostics Inc. kill two birds with one stone. With a new system in place, the health care services company was able to improve a core business process — collecting payments — and at the same time comply with industry regulations.

The electronic data interchange (EDI) project "transformed third-party claim and payment exchanges with thousands of trading partners and payers at 40 business units," says Mitchell Hansen, vice president of enterprise systems and services.

Lyndhurst, N.J.-based Quest provides clinical lab services for doctors, hospitals, health maintenance organizations, companies and government agencies. Each month, Quest submits more than 6 million claims to managed care organizations, third-party insurance companies and government payers through its EDI engine and receives 5 million to 6 million payments.

"In addition to millions [of dollars] in net cash flow every month, these transactions are data-rich," Hansen says. They contain information that's needed to balance and track the contractual disallowances, co-pays and deductibles that are all part of laboratory billing.

Quest is using PaperFree from Sybase Inc. as the processing engine in a Microsoft Windows 2000 and SQL Server environment. An internally developed intranet application provides status updates and performance data to managers. Quest worked with IBM Global Services' health care practice on the project to gain insights into industry best practices and integration.

The project was complex, involving more than 2,000 individual implementations to get payers converted to the new system, Hansen says. Quest built a mechanism to monitor the progress of targeted payer conversions, which were scheduled based on cash-flow volume, complexity of effort, and national, regional or local payer exposure, he says.

"One of the biggest challenges was the coordination of the many departments at Quest Diagnostics that either use or are involved in claims and remittance processing," says Chris Keller, an IBM consulting IT specialist who worked on the project. Process analysis showed that there was a lot of duplication of effort. "By showing this duplication, it helped to bring together the different departments and to consolidate the overall process into a much more streamlined flow," Keller says.

The new billing system replaced an array of applications that Quest had accumulated through multiple corporate acquisitions over the years. This allowed the company to create a single processing system and eliminate hundreds of mainframe-based data files and programs, at a huge cost savings, Hansen says.

The new system has also helped Quest reduce its dependency on clearinghouses, limit the number of errors resulting from poor data quality, and eliminate most transaction steps and charges in the billing cycle. "We reduced processing steps by 93%," Hansen says, decreasing the need for support and maintenance and contributing to labor savings. However, he wouldn't say how much the system cost or how much it is saving the company.

Ken Vollmer, an analyst at Forrester Research Inc. in Cambridge, Mass., says EDI has proved to be an efficient way to move billing information among companies in the health care industry. Many in the industry are using EDI largely because the U.S. Department of Health and Human Services requires the use of the technology as a standard for such transactions.

"The reasons Health and Human Services mandated [EDI] were that it was an existing standard, it was widely adopted, and it was well proven," Vollmer says. "The technology is very well understood."

In addition to the process improvements, the new billing system is also helping Quest meet the Health Insurance Portability and Accountability Act requirements for completing insurance billing transactions in a standard format, Hansen says. ◗

Violino is a freelance writer in Massapequa Park, N.Y. Contact him at bviolino@optonline.net.

Lease Leader

RENT-A-CENTER REINVENTS ITS UNWIELDY LEASE MANAGEMENT SYSTEM

BY MARY K. PRATT

WHEN Rent-A-Center Inc. decided to install new lease management software, its IT leaders made a plan to introduce project management as well. They consider both initiatives great successes.

"If we didn't have project management, we would have really been in trouble," says lease administration manager Jeff Stubbe.

IT leaders proposed bringing project management to Rent-A-Center in 2004 after learning that the real estate group wanted to upgrade one of its systems, says David A. Oles, IT director of research and development. The real estate workers had been using three separate data sources to track and manage approximately 3,000 Rent-A-Center store leases. The system was time-consuming and created problems with interfacing as well as data integrity, Oles says.

Rent-A-Center selected software from Accruent Inc. in Santa Monica, Calif., for its Strategic Lease Information Management, or SLIM, project. The initiative included implementing new lease management software, converting existing databases, training users and establishing ongoing technical support.

Despite the project's technical requirements, Oles says the challenge wasn't with the technology. Rather, it was getting the company to embrace project management.

Although project management had some strong proponents in IT, Oles and others say they knew they couldn't force changes on unwilling participants and expect success.

"We needed everyone on board with this," Oles says.

So IT took deliberate steps to win converts. Oles first convinced the real estate folks that IT could deliver the SLIM project on time and within budget using project management.

Proponents introduced a new methodology known as DADI — definition, acquisition, development and implementation. "It just doesn't sound as overwhelming as saying you're going to use project management," Oles says.

They then took small steps moving forward, sharing victories as they went ahead, says IT project manager David Norwood.

"We demonstrated some immediate benefits," he says, explaining, for example, how project management helps better define requirements and track issues.

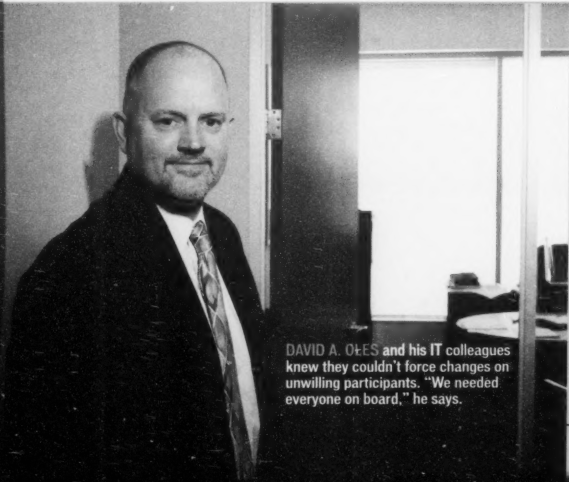
Norwood acknowledges that there were challenges under the new process, such as getting the IT R&D staff working with the hands-on tech people, who were used to less documentation. But even that smoothed out, he says, as people learned "how the process worked, the right person to contact at the right time, and when to go to the top person."

Bim McGeehan, manager of public relations at the Project Management Institute in Newtown Square, Pa., says such steps are key to success.

"What project management requires is cross-communication. If an organization is very heavily siloed, those barriers have to be broken down before it can become effective," he says.

The IT department seems to have achieved that. "Word spread on how successful it was," says Oles. "We immediately got requests to add this type of value to other projects." ◆

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*



DAVID A. OLES **and his IT colleagues knew they couldn't force changes on unwilling participants. "We needed everyone on board," he says.**

REID HORN

RENT-A-CENTER INC.

www.rentacenter.com

BUSINESS: With more than $2.3 billion in revenue in 2004, Rent-A-Center has nearly 3,000 stores throughout the U.S. and Canada that rent furniture, electronics, appliances and computers.

IT DEPARTMENT: 45 employees

PROJECT CHAMPION: David A. Oles

PROJECT PAYBACK: The Strategic Lease Information Management initiative cost $300,000; company officials haven't determined its return on investment but say the benefits include improved efficiency. Moreover, they say the SLIM initiative allowed them to implement project management, which has created efficiencies and introduced greater organization to IT strategic planning and implementation.

2006 Award Winner

1-800-FLOWERS.COM INC.
www.1800flowers.com

BUSINESS: 1-800-Flowers.com in Carle Place, N.Y., is a major retailer that sells a variety of merchandise, including flowers, plants, gourmet foods and other gift items, under eight separate brands. The company expects to generate about $800 million in revenue this year, more than double of what it generated just five years ago.

IT DEPARTMENT: 102 employees

PROJECT CHAMPION: Enzo Micali

PROJECT PAYBACK: 1-800-Flowers.com incorporated load-balancing and messaging capabilities to distribute traffic across three data centers, thereby tripling capacity.

2006 Award Winner

"During holiday peak hours, we will have database servers screaming in the 85% range, when usually they are at less than 30%," says ENZO MICALI of 1-800-Flowers.com.

GIORGIO PALMISANO

Bumper Crops

LOAD BALANCING HELPS RETAILER MANAGE SPRINGTIME SPIKES

BY JENNIFER McADAMS

BLOSSOMS ABOUND in the month of May, especially at 1-800-Flowers.com Inc., where Mother's Day transactions can send traffic soaring 15 times above normal rates. Bracing for the huge spring spike, IT executives at this retailing giant have come up with a global load-balancing strategy designed to homogenize the user experience while wrapping in a pair of dormant data centers.

As its name suggests, 1-800-Flowers.com originated as a buying channel centered on phone orders. When Internet sales bloomed, the company quickly abandoned its reliance on a single outsourcer to handle e-commerce orders. The IT staff decided to handle matters in-house instead and opened the company's first data center in New York, later adding facilities in the Washington and Dallas areas.

But 1-800-Flowers.com initially relied on its New York facility to handle transactions and relegated its secondary and tertiary facilities mostly to backup and disaster recovery functions. As the company swelled through the acquisition of brands such as Magic Cabin Dolls and the Popcorn Factory, the need to maximize all data centers and distribute traffic more evenly became obvious.

"During holiday peak hours, we will have database servers screaming in the 85% range, when usually they are at less than 30%," says Enzo Micali, senior vice president and CIO. "By pursuing a load-balancing strategy, we were able to leverage the data centers that were just sitting there. Now, all of the facilities are hot and online."

1-800-Flowers.com's challenge is typical for major e-commerce firms, notes Rob Whiteley, an analyst at Forrester Research Inc. "Networks are being taxed to an unbelievable amount. They were never designed to do what they are now being asked to do," he observes.

Because of this strain, online retailers like 1-800-Flowers.com are scrambling to balance loads over workhorse networks, Whiteley says. "For the last 18 months, solutions have been getting much cheaper, thus making it possible for enterprises to bring this back in-house," he says.

To distribute data over its three facilities, the company is using three global load balancers from Cisco Systems Inc. and added Sonic Software Corp.'s SonicMQ messaging infrastructure to distribute traffic among the data centers.

To make sure users purchasing from any of the eight brands have a consistent shopping experience, the IT team also spent a great deal of time designing user cookies that allow for seamless transactions when users are patched over to a second hosting site during the course of a sale.

1-800-Flowers.com's IT executives expect the global load-balancing model to accommodate about twice the current traffic levels and estimate that the technology has lowered costs by nearly 60%.

Micali urges others to think long term when projecting and managing traffic loads. "We used to be so worried that we might not make it through a particular holiday, but not so much anymore," he says. ▸

McAdams is a freelance writer in Vienna, Va. Contact her at Jjwriterva@aol.com.

Picture Perfect

ROCKFORD HEALTH DIGITIZES DIAGNOSTIC IMAGES FOR BETTER PATIENT CARE

BY MARY K. PRATT

THE NEW Picture Archiving & Communications System (PACS) at Rockford Health System does what many IT initiatives only hope to do: It allows workers to be more productive.

Dr. Steven Schneider, a diagnostic and interventional radiologist, is testament to that. He says he used to handle 20 to 30 cases an hour but can now do 60 to 70. Consultations with other specialists that once took an hour to arrange now take mere minutes. And he now knows that images will be properly archived rather than potentially misplaced in old-fashioned filing systems.

The nonprofit health care system in Rockford, Ill., implemented PACS to digitize and computerize the results of various imaging exams. It replaces analog images captured on silver oxide negatives, such as X-rays, with electronic images.

Dennis L'Heureux, senior vice president of planning and CIO, says Rockford needed the system to better serve its patients. Radiologists using PACS can review exams more quickly. And because PACS allows doctors to easily and instantly view the same images, it promotes more collaboration on diagnoses.

Despite such advantages, L'Heureux says he realized that he needed to foster ownership among the users for the implementation to be successful. "You don't want them to turn around and ask, 'Who made this decision?' or have them say, 'We wanted this one,' " he says.

To avoid such scenarios, L'Heureux assembled a steering committee of radiologists, emergency room physicians, orthopedic surgeons and IT staffers — about a dozen people in all — to work on the selection process.

L'Heureux says his team also looked at industry reports on software systems, compared total cost, reviewed comparisons from users and considered reports from Rockford's own radiologists following vendor demonstrations.

They used the information to whittle the candidates from 10 vendors to one: McKesson Corp. in San Francisco. McKesson's contract included several terabytes of SAN/RAID storage, multiple servers, a number of very high-resolution flat-screen workstations and the actual software applications.

Phased Implementation

Rockford implemented PACS in two phases. The first go-live date was Aug. 9, 2004, and the completion date was March 31, 2005.

The hard work made the implementation the best of L'Heureux's career. "It was like the perfect song. Everything came together," he says.

Rockford spent $4 million on the PACS implementation. PACS administrator Connie Bolthouse says she plans to analyze the return on investment in the future but adds that she has already seen a reduction in hard costs, such as money spent on film.

The ROI can be significant, says Matt Meitzner, a senior associate at ECRI (formerly the Emergency Care Research Institute), a nonprofit health services research agency in Plymouth Meeting, Pa.

He says a hospital that does 150,000 imaging studies per year, with five to 10 films per study, would spend $750,000 to $1.5 million annually on film alone. PACS eliminates those costs, as well as others that are harder to quantify, such as extra staff time.

Meitzner, like Rockford officials, points out that PACS can improve the quality of patient care, too. "The benefit to patient care is you can have more than one doctor looking at the image at one time," he says. "It tends to speed things up." ▸

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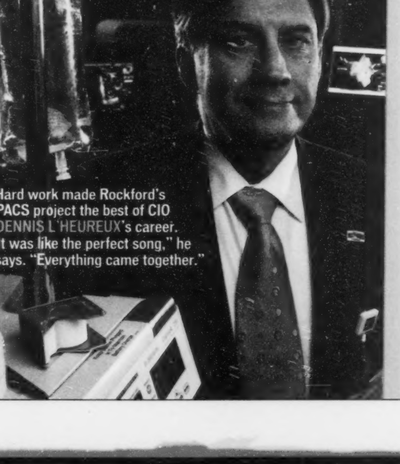


Hard work made Rockford's PACS project the best of CIO DENNIS L'HEUREUX's career. "It was like the perfect song," he says. "Everything came together."

ANDY GOODWIN

ROCKFORD HEALTH SYSTEM

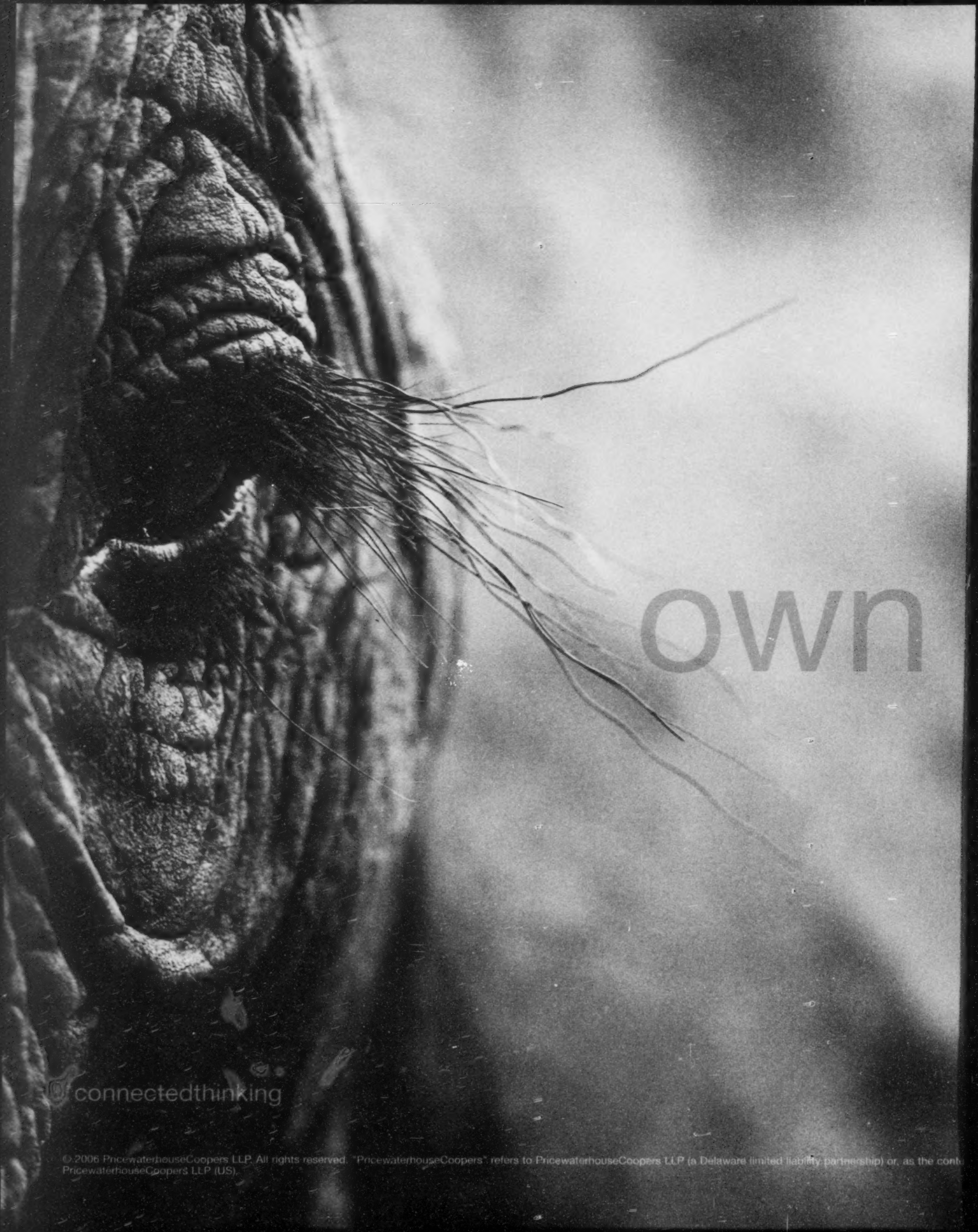
BUSINESS: The Rockford, Ill.-based nonprofit integrated delivery system consists of a 400-bed hospital, a 120-physician specialty clinic and a visiting nurses association. Rockford generates more than $500 million in revenue annually.

IT DEPARTMENT:
52 employees

PROJECT CHAMPION:
Dennis L'Heureux

PROJECT PAYBACK:
Rockford spent $4 million to install PACS, and although it has not yet calculated an ROI, officials say they already see increased productivity and more collaboration on diagnoses.

2006 Award Winner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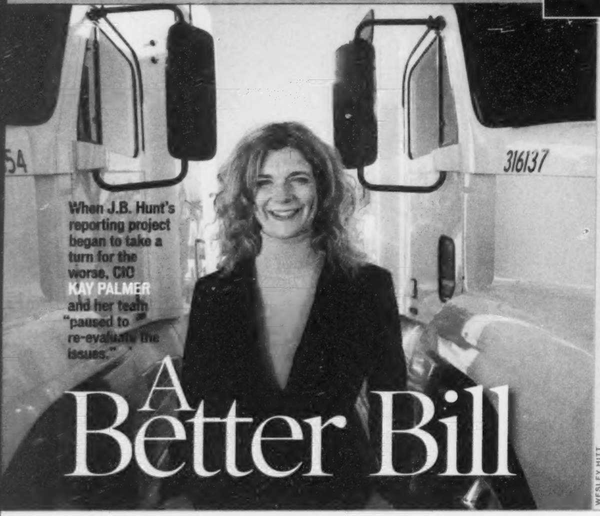

When J.B. Hunt's reporting project began to take a turn for the worse, CIO **KAY PALMER** and her team "paused to re-evaluate the issues."

WESLEY HITT

A Better Bill

J.B. HUNT TRANSPORT SERVICES INC.

www.jbhunt.com

BUSINESS: The company's trucking unit, which has a fleet of about 4,300 tractors, provides freight transportation service in North America. Its intermodal unit, which has about 1,200 tractors and 22,000 containers, moves freight by train and truck. The company also supplies customers with drivers and equipment. Revenue in 2004 was $2.79 billion.

IT DEPARTMENT: 330 employees

PROJECT CHAMPION: Kay Palmer

PROJECT PAYBACK: J.B. Hunt's centralized system for payroll, billing and management reporting cost about $6.3 million, and the company expects a three-year return of $30 million from technology and process improvements.

2006 Award Winner

CONSOLIDATED DATA RECORDS LET J.B. HUNT SPEED UP BILLING CYCLES

BY BOB VIOLINO

WHEN J.B. HUNT Transport Services Inc. set out to consolidate more than 150 customized PC-based applications for payroll, billing and management reporting, it was hardly an easy ride.

The project was designed to reduce complexity, ensure consistency of data and comply with regulations such as the Sarbanes-Oxley Act. The provider of trucking and logistics services accomplished its ambitious goals via a new, internally developed system called People Admin Client Engine, or PACE.

But in the early days of the project, there were numerous technical and project management challenges. IT struggled to get consistent requirements from the business unit, and developers became overly enamored of the technology and consequently overdesigned the system, according to Kay Palmer, CIO and executive vice president of IT at the Lowell, Ark.-based company.

After investing more than $2 million in the project, Palmer says, "we paused to re-evaluate the issues." J.B. Hunt considered outsourcing but wasn't satisfied with its service provider's initial work, so it brought the project back in-house. The experience "proved you can't bring in someone who doesn't know the industry and bring them up to speed quickly," she says.

The business unit agreed to better define its needs, and IT reduced the technologies used in the system, Palmer says. A team of IT and business people narrowed the requirements, created a well-defined project plan and governance structure, and successfully completed a base system in the third quarter of 2004.

J.B. Hunt used J2EE to build PACE, which runs on a series of BEA Systems Inc. application servers. The system allows the accounts group to record driver activity information and produce weekly driver pay, customer invoicing and customer performance reports. Driver activity is either entered into a Web-based screen by an account manager or directly by a driver through an in-cab unit, which then transmits the data via satellite or a cellular connection.

Contract rules are developed in a rules database using a business rule management system from iLog Inc. and are then available for reuse by other accounts, Palmer says. More than 25% of the business unit's accounts have been converted to the new system, and the company expects to convert the rest of them within the next nine months.

Already, the centralized systems are easier to maintain, payroll management is more accurate, and billing cycles are faster. J.B. Hunt has also increased revenue through billing of contractual activities that were being missed with manual systems.

Richie Henderson, vice president of marketing strategy, says the company spent about $6.3 million on the project and expects a three-year return of $30 million and a seven-year return of $87 million. Those paybacks will come from both the new system and improved business processes, he says.

"How people get billed and how drivers get paid is a real complicated thing," says Jim Holincheck, an analyst at Gartner Inc. "To be able to automate that and streamline it and do it more accurately is very important to their overall business." ▸

Violino is a freelance writer in Massapequa Park, N.Y. Contact him at bviolino@optonline.net.

Technology Trailblazer

AMERICAN MODERN PIONEERS SOA IN INFRASTRUCTURE OVERHAUL

BY STEVE ULFELDER

WHEN AMERICAN Modern Insurance Group Inc. decided that its systems weren't keeping pace with its changing needs, Vice President of Infrastructure Patrick Law and his IT staff jumped in with both feet. They replaced mainframes, databases, the company's core business application and all associated infrastructure in one ongoing, $62 million project — building the whole package atop a service-oriented architecture to boot. Law acknowledges that along the way, he's learned some hard lessons about being in the SOA vanguard.

Amelia, Ohio-based American Modern is replacing two aging Unisys ClearPath mainframes with a single IBM zSeries mainframe, and it's moving from Unisys and Oracle databases to IBM's DB2. The big-picture goal, set to be accomplished by the end of this year, is the retirement of the insurer's homegrown property and casualty policy administration system — 30 years old and developed in Unisys Cobol — with Huon, an IBM application for the insurance industry.

Technologically speaking, the project's integration and transition demands are an alphabet soup: IBM's MQSeries, the CICS Transaction Gateway, WebSphere Business Integration Server, the Java Database Connectivity API (to facilitate integration between J2EE components on AIX) and so on. "Not only is this project technically challenging," says Law, possibly understating the case, "it also has a lot of risks that make project management extremely difficult."

Perhaps the most difficult, and impressive, aspect of American Modern's undertaking is the company's determination to shift to an SOA. "Since SOA on the mainframe is still in its infancy, there are many technical issues, such as design approach and interface, to address," Law says. For example, he calls IBM's Huon "a 20-year-old monolithic CICS application" and says adapting it to a service-based system has been one of his major challenges. "The effort of turning monolithic Cobol modules to functional components and offering them to the Java-based middle tier as services is almost completed," Law adds.

Question of Ownership

According to Dennis Gaughan, an analyst at AMR Research Inc., technical challenges are only part of the picture for early SOA adopters like American Modern. "We hear about a lot of issues with accountability and governance," he says. The ownership of traditional applications, defined by functional areas, such as manufacturing or underwriting (depending on industry), are clearly defined.

With the tectonic shift to SOA, "companies find themselves constructing new processes by taking pieces from various applications," Gaughan adds. "As a result, you see a lot of questions around who owns these composite apps." A key element of SOA success, he says, is having a crystal-clear understanding of governance, accountability and service-level expectations.

Law acknowledges that American Modern has plenty to learn about the governance side of SOA, having thus far focused the bulk of its attention first on justifying the cost of the ambitious project and then on the technology.

Although justifiably proud of the project, Law doesn't deny that there have been bumps and bruises along the way. Training and personnel expenses were one unpleasant surprise. For example, early on, American Modern developed a case of sticker shock when the company needed a consultant to work with middleware from the former CrossWorlds Software Inc., which was purchased by IBM. "We actually wound up developing our own expert in-house," he says.

And when it comes to SOAs, Law adds, "there's a lot of talk out there, but not a lot of true plug-and-play products or standards." The big lesson, he says: "If you really want to do it, you're on your own." ◆

Ulfelder is a freelance writer in Southboro, Mass. Contact him at steve@ulfelder.com.

AMERICAN MODERN INSURANCE GROUP INC.

www.amig.com

2006 Award Winner

BUSINESS: American Modern Insurance Group is a subsidiary of The Midland Co. Amelia, Ohio-based Midland had revenue of $78.4 million in fiscal 2004.

IT DEPARTMENT: 163 employees

PROJECT CHAMPION: Patrick Law

PROJECT PAYBACK: The homegrown property and casualty policy administration system will be retired by year's end. Law reports that the project has already paid for itself.

AUSTIN ENERGY
www.austinenergy.com

BUSINESS: Austin Energy is a community-owned electric utility and a department of the city of Austin.

IT DEPARTMENT: About 150 employees

PROJECT CHAMPION: Andres Carvallo

PROJECT PAYBACK: The organization spent about $15 million on automated meter-reading capabilities that eliminate the need to dispatch trucks to apartment buildings situated near the city's many universities. Officials estimate that 120,000 annual "truckrolls" at a cost of $70 each are no longer needed.

2006 Award Winner

ANDRES CARVALLO

WILL VAN OVERBEEK

Circuit Breaker

AUSTIN ENERGY'S WIRELESS METERING EASES OVERLOAD IN A COLLEGE TOWN

BY JENNIFER McADAMS

UNTIL Austin Energy adopted wireless metering technology, the Texas-based utility was jolted twice a year by the fall arrival and spring departure of nearly 60,000 students at the city's colleges and universities. Those migrations sent Austin Energy crews scrambling to complete the meter reads necessary to set up service for powering lights, hair dryers, PCs and other mainstays of collegiate life.

An initial step toward a $50 million IT overhaul, Austin Energy's automated meter reading (AMR) system has eliminated about 120,000 "truckrolls," or site visits, to apartment complexes near the city's many campuses. IT officials have snagged AMR-related savings — about $70 for every truckroll that was eliminated — and are using that money to finance other projects, including wireless work-management systems to speed up the truckrolls that remain necessary.

Using technology to nix obvious costs, and bankrolling early savings for subsequent projects, made up the driving strategy behind Austin Energy's move toward its ultimate goal of implementing a service-oriented architecture. The system will reach deep into the enterprise's business operations, says Andres Carvallo, CIO at the community-owned utility company, which is also a department of the city of Austin.

"These initiatives are

only two projects in a journey of many more. Essentially, they showcase quick transformation and payback," says Carvallo. He estimates that the two efforts have cost about $17 million — $15 million for AMR capabilities and $2 million to seed Austin Energy's field force automation push.

Potential returns from the projects will easily dwarf those modest investments, Carvallo insists. "There are big savings, especially in terms of the metering initiative," he explains. "You can just imagine the way it was before, with tens of thousands of trucks coming from and going to apartment complexes near campuses."

The city's college town status likely helped Austin Energy get the green light for its AMR adoption, says Zarko Sumic, an energy and utilities industry analyst at Stamford, Conn.-based Gartner Inc.

"With AMR solutions, there is often a high cost of deployment and a need to retrofit existing meters and establish a communications infrastructure to be able to read the meters. With some exceptions — such as Austin Energy, a significant college town — these costs can be hard to justify," he says.

However, the use of add-on capabilities, such as Austin Energy's move-in/move-out meter reads, can make a quick business case for AMR, Sumic notes.

For its AMR systems, Austin Energy used Atlanta-based Cellnet Technology Inc.'s InfiNet, a secure IP wide-area networking system that gathers meter-related data through radio transmission signals into network endpoints. The system then filters the information to a host system that manages and monitors the information on behalf of the enterprise. Austin Energy is constantly downloading data gleaned from the meter feeds into its own data warehouse. "Cellnet gives us final output readings in a set of reports, which we integrate into our billing system," says Carvallo.

More Wireless Tools

Despite the benefits of AMR, Austin Energy can't simply eliminate all truckrolls. Instead, the organization is incorporating wireless work management systems to expedite remaining work orders, such as those involving physical repair of meters. Forty crews now use Austin Energy's wireless work management tools, which incorporate GPS technology, laptops and wireless interfaces to central systems.

Next in line are field design and planning and power restoration crews.

"But that's a bigger chunk of folks. We are moving forward, but we still don't have a final rollout plan for that," notes Carvallo, who says he urges others to pursue such projects one at a time and to focus on showing stakeholders results before moving on to the next step. ◗

McAdams is a freelance writer in Vienna, Va. Contact her at Jjwriterva@aol.com.

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BEST IN CLASS
Judges

A PANEL OF JUDGES was asked to review projects from the 2006 Premier IT Leaders honorees. In particular, they were asked to look for signs of measurable payback, learning experiences, strategic importance to the business, substantive customer impact, expansion or change in the role IT plays in the organization, and creation of new revenue opportunities or cost savings. Judges evaluated only those candidates outside their own industries. Special thanks go to our judges (below), themselves Premier 100 IT Leaders alumni, who helped evaluate dozens of candidates.

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Ogilvy & Mather Worldwide
New York

DAVE BARNES
CIO and senior vice president
United Parcel Service Inc.
Atlanta

DALE FRANTZ
CIO
Auto Warehousing Co.
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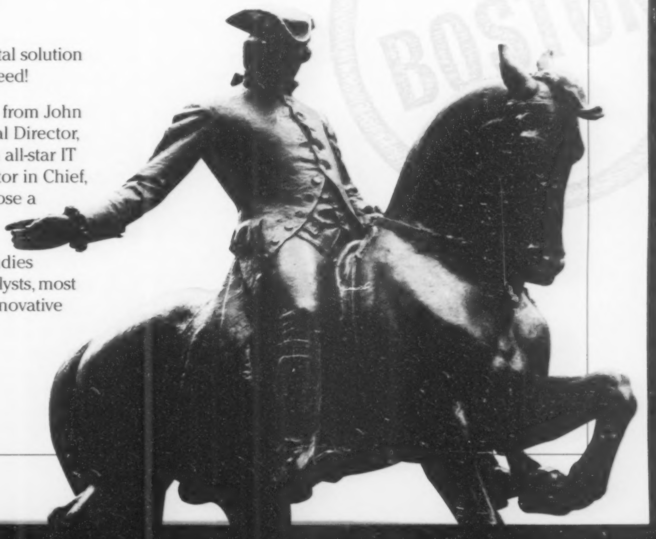

IBI, Google Launch BI Search Tool

Users can get unstructured and structured data

BY HEATHER HAVENSTEIN

INFORMATION BUILDERS Inc. last week unveiled a software tool developed with Google Inc. to help its business intelligence users access internal company data using Google's search engine.

WebFocus Intelligent Search will allow users to enter keywords through a Google-like Web page to access structured data stored in corporate databases, according to officials at New York-based Information Builders. Such structured data was previously inaccessible to the Google search engine.

John Sheridan, manager of business technology and development at human resources outsourcing firm Administaff Inc. in Kingwood, Texas, said the new tool should be helpful to both BI users and report developers.

The new tool supports Administaff's goal of providing simple data-access techniques so BI users can easily get the information they need to make operational decisions, he said.

"We're trying to push a lot more self-service," he said. "Everyone is used to a Google-like search. There is no training, but it gives people a lot of power to go in and look at a variety of information in our systems and pull that information back quickly."

Intelligent Search will also allow report developers to more quickly find the information needed to create reports requested by users, Sheridan said. "When you're building reports, you want to try to leverage off of what is already there, rather than starting from scratch," he said.

Sheridan said he likely won't participate in the beta program for the software because the company is still adapting to the new features in WebFocus 7.1, which Administaff just installed in December.

However, Sheridan said he plans to begin evaluating the new software as users become more comfortable with the reporting tool upgrade.

Michael Corcoran, chief communications officer at Information Builders, said WebFocus Intelligent Search uses integration tools from its iWay Software Inc. subsidiary, its WebFocus BI reporting software and the Google engine to link structured data from corporate databases to unstructured data sources like HTML files. Therefore, the tool can provide users with BI reports compiled from data stored across the enterprise, Corcoran said.

Internal IT Features

In addition to commonly requested searches like those seeking to identify all information on a particular client or sales figures by region, the tool lets users search for information about internal IT systems, Corcoran said. For example, users could enter the names of employees who have left a company to find out whether they still have access to internal systems, he explained.

Keith Gile, an analyst at Forrester Research Inc., said the marriage of enterprise search and BI is being driven by users who don't want to have to know where data is located to be able to find it.

"This makes it a more compelling argument that says you can go beyond search and beyond BI and get the best of both worlds," Gile said. "We're seeing such a huge demand for this type of approach . . . and the vendors would be silly not to exploit it."

However, he warned that, as with any search, users must include some context within a search, or they risk bringing back thousands of results that might not include the specific data they were requesting.

The new tool will ship in the second quarter. ▸

HOW IT WORKS

WebFocus Intelligent Search

- IWay integration software monitors internal networks and transforms messages into formats that can be indexed by the Google Search Appliance.
- The index chronicles all available enterprise data, including business-to-business data, EDI transactions, ERP data, flat files and Web services.
- Google runs the front end of the system to let users access relevant information stored in the core applications.
- WebFocus reporting tools connect the search terms with the hit information and original indexed material and create a report.

Some Manufacturers Get Early RFID Payoff

BY MARC L. SONGINI
GRAPEVINE, TEXAS

The use of radio frequency identification (RFID) tags is providing a payoff to some manufacturing firms despite some technology hiccups and high price tags.

Users at the RFID World conference here last month said that as the technology matures, it is starting to show a solid return on investment. Indeed, some said the technology is delivering a unique look into the manufacturing supply chain.

James Jackson, director of vendor relationship management at clothing manufacturer VF Corp. in Greensboro, N.C., said that RFID technology is helping his company ensure that merchandise tied to time-sensitive events like the Super Bowl is on store shelves at the right time. Since implementing its RFID system, VF can notify stores when tags report that inventory is stockpiled in back rooms instead of being on the sales floor.

The RFID program will help VF reduce the amount of payments it makes to Wal-Mart Stores Inc. in the form of fees that the retail giant charges suppliers when it says it hasn't received an item ordered. The tags let VF verify when items are shipped and arrive at the stores.

Some users at the conference warned their colleagues that RFID can still carry a significant price tag despite the benefits.

"In reality, it costs money," said Jim McMasters, senior vice president of information systems at Tandy Brands Accessories Inc., a maker of fashion accessories.

Jackson noted that the RFID effort at VF was slowed early on as the company waited for RFID costs to drop.

J. Kevin Brown, director of information systems at Daisy Brand Inc., which makes sour-cream products, said that his firms's use of RFID technology to track inventory can allow it to keep abreast of how long perishable goods are in the supply chain.

Dallas-based Daisy Brand uses RFID technology from Alien Technology Corp. in Morgan Hill, Calif.

Brown also said the RFID system can help prevent thefts and track the success of new products.

Bob Berg, senior business systems manager at DHL Worldwide Express in Scottsdale, Ariz., is working to implement an RFID system to improve the security of goods in transit, help protect perishables from spoiling and improve supply chain performance for customers.

DHL is rolling out the RFID system to help its customers comply with Wal-Mart's mandate that its suppliers use RFID technology. ▸

Wal-Mart Offers RFID Update

GRAPEVINE, TEXAS

WAL-MART CONTINUES to update its RFID initiatives, adding new uses for the technology and getting more suppliers and partners to comply with its mandates.

The Bentonville, Ark.-based retailer implemented its RFID system in January 2005 after completing pilots at distribution centers in Dallas, said Carolyn Walton, vice president of information systems.

Sitting on a panel at the RFID World conference here late last month, Walton said the number of Wal-Mart suppliers using RFID technology has more than tripled since the effort began. More than 300 suppliers now feed RFID-tagged goods to 500 Wal-Mart facilities, she said.

By January 2007, the company expects that 600 of its suppliers will be using RFID technology and that the number of Wal-Mart stores capable of handling RFID-tagged items will have doubled to about 1,000.

Walton noted that Wal-Mart has seen a return on its RFID investment – even before any extensive process changes have been put in place.

For example, she said, out-of-stock items carrying RFID tags are being replenished three times faster than they were before the project began. However, she didn't disclose how much money Wal-Mart has saved by using RFID.

One RFID project that's still in a proof-of-concept phase involves adding sensor tags to perishable goods such as fruit. Wal-Mart is using a special tag to track just how long a crate of, say, bananas has been in transit, so it can ensure that it's sold when the fruit is ripe, Walton said.

Later this year, Wal-Mart will launch a pilot project that tests whether RFID tags can be used to improve the efficiency of unloading boxes from trucks, Walton said.

– MARC L. SONGINI

Georgetown Hack May Have Exposed Personal Data

BY JAIKUMAR VIJAYAN

Georgetown University in Washington has called in the U.S. Secret Service to investigate a server breach that may have exposed confidential information on more than 41,000 individuals.

The breach appears to have been caused by an external hacker and involved a server that managed information on services provided by the District of Columbia Office on Aging, according to a university statement. The breach may have exposed the names, dates of birth and Social Security numbers of people taking part in the agency's programs.

The server was managed by a university researcher under a grant from the Office on Aging.

The breach was discovered Feb. 12 during a routine check of school networks by Georgetown's information security office, said a university spokesman. The compromised server was immediately disconnected from the network, he said.

But because "it took some time to recognize the scope and nature of the exposure," the intrusion was not disclosed to the Office on Aging for almost two weeks, according to the spokesman. Law enforcement officials were then notified on Feb. 27, and the Secret Service took custody of the compromised server for forensic testing the next day.

There is no evidence that the compromised information has been misused, the spokesman said. He said the breach did not affect any of the university's core computer systems containing student financial and admission records.

Damage Control

Georgetown is now notifying people whose information may have been exposed in the incident, the spokesman said. But that task is complicated because the breached server contained records dating back to 1983 on people who may now be deceased.

The university has established a toll-free phone number and a Web site where people can get more information.

In a March 3 e-mail to students and workers, Georgetown CIO David Lambert said the university's security office plans to focus on "enhancing the security of confidential information contained on campus and departmental servers" during the spring and summer. He did not elaborate.

According to a university source familiar with the incident who requested anonymity, the server in question was under the control of an individual who wasn't technically qualified to be a systems administrator. "Because we're a university and fairly open, there are many computing fiefdoms," often run by individuals with grant money, the source said in an e-mail. ▪

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DigitalGlobe's Massive IT Upgrade Nears Completion

BY LUCAS MEARIAN

DigitalGlobe Inc., the company responsible for creating the satellite images accessed by users of Google Inc.'s Google Earth function, has nearly completed a massive upgrade to its IT infrastructure.

DigitalGlobe officials said the project was undertaken to add support for two more satellites that the company plans to launch over the next two years to bolster its imagery business.

Longmont, Colo.-based DigitalGlobe said that an upgrade of its storage capabilities is the key piece of the project. To date, the company has added more than 200TB of high-end and midrange storage capacity with the installation of new systems from Hitachi Data Systems Corp.

In addition, DigitalGlobe has installed new data management software from Advanced Digital Information Corp. (ADIC).

The upgrades have already quadrupled productivity, said Luc Trudel, director of IT operations at DigitalGlobe.

In addition, the company has rolled out Gigabit Ethernet ports throughout its LAN, and it plans to install 10Gbit/sec. Ethernet connectivity later this year in other parts of its infrastructure.

Additional Satellites

"Once our second satellite is launched, data volume will increase fivefold, and the eventual launch of a third satellite will further increase data volume," Trudel said.

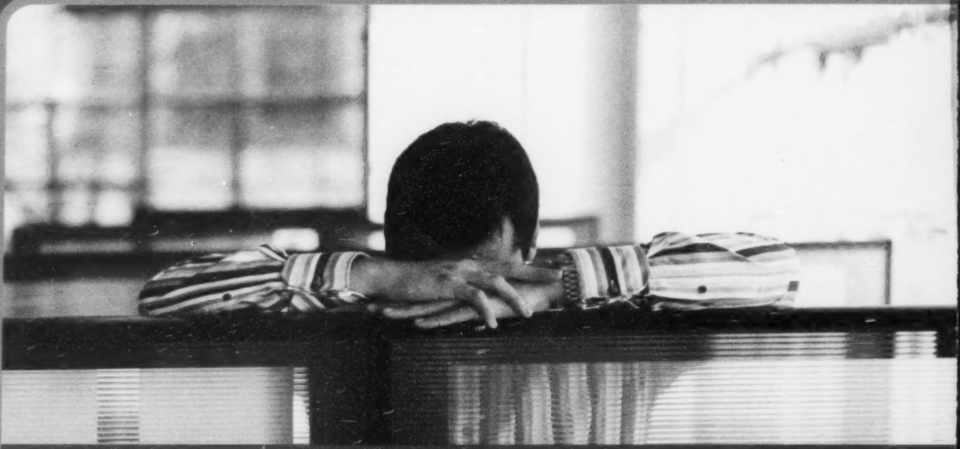
The company plans to launch the second satellite later this year and the third in 2008, he noted.

Trudel said that he hasn't calculated a return on investment for the project, but he added that the new infrastructure has already cut the time required to process satellite images from about 12 hours to three.

Trudel said that the file-sharing software from Redmond, Wash.-based ADIC helps lessen the workload of storage administrators, and "we're able to rapidly repurpose and/or expand storage to meet shifting production needs," he added.

The upgrade has also included the installation of numerous servers over the past year, including low- and high-end systems from Sun Microsystems Inc. and five Origin 3000 supercomputers from Mountain View, Calif.-based Silicon Graphics Inc.

The main challenge in the upgrade was understanding how best to configure the entire storage stack, from the physical layer — the HDS arrays and Cisco 9506 Fibre Channel switches — to the logical layer that includes ADIC's StorNext file system, according to Trudel. ▸



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SAN Consolidation Has Saved Health Care Firm $160k – So Far

BY LUCAS MEARIAN

Kindred Healthcare Inc. is continuing work on a yearlong project that has so far reduced its port costs by $160,000, consolidated 26 switches into four and created a dual-redundant Fibre Channel network that increased reliability and added long-distance replication.

The company began upgrading its storage networking and disaster recovery capabilities last spring. Early in the project, the Louisville, Ky.-based long-term medical care provider replaced McData Corp. directors and switches with two storage-area networks (SAN), said Tim Hesson, director of storage management.

The new system uses four MDS 9509 Multilayer Director Switches (MDS) from Cisco Systems Inc. and provides 800 ports, he said. The consolidation freed up 100 switch ports that had simply linked all the switches in the McData network, Hesson noted.

Kindred plans to expand its use of the MDS switch's iSCSI capabilities for Ethernet connectivity to eventually consolidate backup on some of its 1,500 Windows-based servers.

"We've always tried to take a look around the corner," Hesson said. "If we are going to spend this money, is there any possibility to do something different or to better improve the infrastructure tomorrow, even if we can't leverage it today?" He didn't disclose a cost for the overall project.

Dual Disaster Recovery

Hesson said the company's storage team later this year will install a dual-network remote disaster-recovery SAN based on two modular Cisco 9216i Multilayer Fabric Switches. The company's current disaster-recovery plan includes the shipping of backup tapes to a facility operated by Wayne, Pa.-based SunGard Data Systems Inc. The plan calls for server rebuilds only in emergencies.

Greg Schulz, an analyst at research firm StorageIO in Stillwater, Minn., said Kindred's SAN consolidation project is an example of a best practice that could work well for almost any large enterprise.

"Generally speaking, it's about taking directors or large port-count switches and using those to replace many smaller ones," he said.

Kindred is an all-EMC storage shop, and over the past year it has installed about 225TB of capacity on multiple high-end Symmetrix DMX arrays, a large number of midrange Clariion arrays and one Celerra network-attached storage array. The company plans to install an EMC Centera content-addressed storage array this month. ◆

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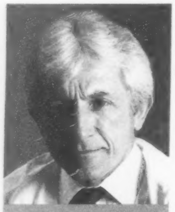
OPINION

DON TENNANT

The Tough Triumphed

IT SEEMS ALMOST IMPOSSIBLE that it's been only one week since my last editorial column, when I was compelled to write about some goings-on in the IT vendor community that I characterized as "timid." It's as if I've been transported beyond the constraints of time and space to a place where timidity is a long-forgotten concept.



DON TENNANT is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

In actuality, all I did was travel to Palm Desert, Calif., to attend *Computerworld*'s Premier 100 IT Leaders Conference, an event that has become the IT user community's essential annual gathering place. It's an amazing occasion, and the attendees no doubt come away each year with a memory of a defining moment — one that captures the essence of the event.

For me, that moment came shortly after the final curtain fell. I happened to run into Tony Caesar, CIO at Head USA, the racquet sports gear maker. Caesar spoke about the previous 36 hours with an eloquence and a passion that I'm unlikely to ever forget.

What animated him most was his reference to a panel discussion that *Computerworld*'s Julia King, the conference chairwoman, had moderated. No, these panelists weren't disaster recovery "experts" or consultants who blithely expounded on what to do and how to do it. They were CIOs who had survived the devastation of Hurricane Katrina.

They were people like Jan Rideout, CIO at Northrop Grumman Ship Systems, whose home was one of the countless that were lost amid the destruction. And Greg Meffert, CTO and CIO for the City of New Orleans, whose family fled to Texas while he stayed with Mayor Ray Nagin at the makeshift command post in the severely damaged downtown Hyatt. And Rizwan Ahmed, who just days before the conference was called upon to leave his post as CIO of Louisiana's Office of Group Benefits and the Department of Natural Resources to assume mind-boggling post-Katrina burdens as the state's CIO.

"They were here," Caesar said incredulously. "They were *here*."

When you ask them why they came, under circumstances that remain almost unfathomable, they'll tell you they "had to." What they mean is that they felt it was their obligation to share their experiences so that their peers could benefit from what they had learned the extraordinarily hard way.

There's something else I noticed about these individuals who bravely confronted adversity: They were some of the quickest at the conference with a smile and a good-humored remark.

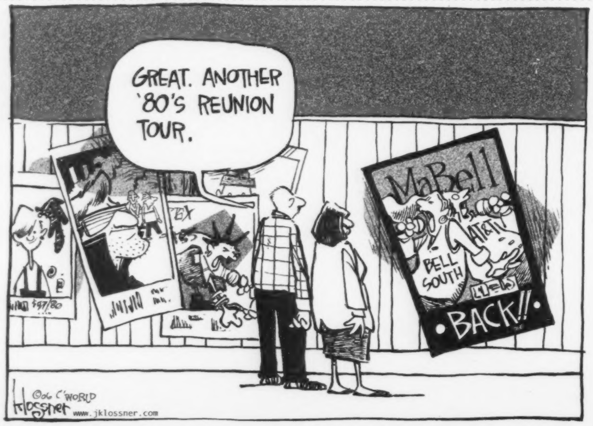
At the formal awards dinner Tuesday evening, I was seated next to Meffert when he was talking about his two young sons who were forced to leave New Orleans while he stayed. I couldn't help but notice his eyes well up.

Yet moments later, he was laughing about the fact that in his capacity as one of two deputy mayors and Nagin's re-election campaign chairman, he had been invited to a dinner with Denzel Washington, who's in New Orleans shooting a film, and to a Hornets-Lakers basketball game — the first major professional sporting event in New Orleans since Katrina hit. He had declined because he felt he needed to be at the Premier 100.

Meffert also mentioned that Nagin had phoned him during the conference and asked him to come to a meeting to discuss an important campaign matter. Meffert told him that he was at a conference in Palm Desert. "He said, 'You're *where*?' " Meffert laughed.

Last week, I wrote that when the going got tough, the timid turned and ran. This week, I can tell you that the going got tough and the tough triumphed. ◗

Don Tennant



MICHAEL H. HUGOS

The Future Belongs to The Agile

IN A world where things happen quickly, companies need to respond fast if they are going to prosper.

Most products and services are new and innovative for only a short while. Soon they become commodities, because they get copied and are offered at lower prices. Profit margins drop when that happens.

This means that a lot of profitable opportunities are short term. So if a company can't respond quickly, it will have a hard time making money. And since most business operations can't function without appropriate technology, IT agility becomes a requirement in our global economy.

MICHAEL H. HUGOS is a CIO at large, author and speaker. He is also a member of the 2006 *Computerworld* Premier 100 IT Leaders class. His books include *Essentials of Supply Chain Management* and *Building the Real-Time Enterprise: An Executive Briefing* (both published by John Wiley & Sons). He can be reached at **mhugos@yahoo.com**.

What is IT agility? It's the mixture of art and engineering that delivers robust 80% solutions fast enough to capitalize on opportunities before profit margins drop. Let's take a look at what this means.

First of all, agility means delivering robust systems, not systems that were thrown together with poorly written code. Agile systems are stable systems that do what they do reliably.

Agile systems are always 80% solutions because they need to be delivered quickly. To do this, developers limit scope and focus on delivering only the most important features in any situation — the ones 80% of the users need. Systems that try to address all the issues fall into the trap of ever-expanding requirements and endless scope creep.

Agile systems enable companies to capitalize on opportunities before the profit margins drop. Delivery time frames required for this vary from one opportunity to another, but they generally range from a few weeks to a few months and almost never more than nine months. Systems simply aren't agile if they take longer than that to deliver.

It's clear that the need for agile systems will grow tremendously in the years to come. If you want to participate in this growth market, then ask yourself whether you are up to the challenge of delivering such systems. If you are up to this challenge, then you are a member of the "Agility Corps."

Members of the Agility Corps deliver agile systems by employing combinations of six key techniques to define opportunities, design solutions and build systems quickly. Members are proficient in all six techniques and masters of some of them.

They use the technique of joint application design to pool ideas from appropriate groups of people. They use the technique of process mapping to identify the most important issues. They use data modeling to organize the relevant data, and they use system prototyping to design user interfaces and technical architectures for systems. Then they apply object-oriented techniques to create system code, and they use system testing to roll it out.

If you are in the Agility Corps, you are also able to remain calm while others in the IT profession rush around babbling about business complexity and the need for complex solutions. You are not intimidated by research reports designed to stir up fear, uncertainty and doubt. You are not taken in by fancy marketing campaigns urging you to climb onto the latest IT bandwagon. This means you are part of the group of IT practitioners who will soon set the standards for IT excellence in most companies. ▸

MICHAEL GARTENBERG

Keeping an Eye on Users' Personal Tech

FOR YEARS, it was pretty easy for IT professionals to safely ignore what went on in the consumer market. After all, in the not-too-distant past, a business tool like your telephone had nothing to do with your camera, and your PC wasn't even in the same room as your music player. Your PC, in fact, probably stayed in the office, and despite the moniker, there was very little personal stuff on your personal computer.

That's all changed. What's more, it seems that consumer personal technology is continuing to explode, even as business IT has plateaued. When personal technology outpaces business technology, there is inevitably a commingling of business and personal data, as business users put their whizzy personal toys to business uses.

This means that IT has to keep abreast of consumer-grade technologies. I'm not suggesting that you go out and buy iPods for everyone, but it is important to understand the implications of living in a world where personal technology is burgeoning.

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One implication of the diffusion of technology both at home and at work is that the line between personal and professional life is increasingly blurred. People who buy tiny storage devices, iPods and PDAs are often also corporate users who don't see any reason not to put those consumer technologies to business uses, or at least to link them to corporate assets and networks. When that happens, what should IT departments do? They can't simply ignore or ban the consumer devices; they need to understand the technologies and then set policies accordingly.

For years, IT departments have generally recognized the need for policies regarding acceptable personal use of PCs, e-mail, instant messaging and other resources. Today, they need to create policies that address the issues that arise when business users bring their personal technologies into the corporate setting. When formulating such policies, the key is to focus on two types of risk that result from business data residing on personal devices:

Data security. The primary risk arises when sensitive data resides on devices that are small and easily hacked, lost or stolen. Devices that automatically synchronize to a remote third-party server add another potential area of insecurity for corporate data. And personal devices that connect over insecure wireless networks create yet another potential risk.

Infection potential. While the main risk today lies in data leaving the corporate network, a secondary risk lies in personal devices introducing threats to the network. PC-centric security vendors emphasize this risk. Although the threat of virus and Trojan-horse transmission is largely confined to insecure PCs or laptops today, handsets and PDAs themselves will likely also become targets of threats to IT networks in the future. IT needs to recognize this and make sure that consumer-purchased technology is secured and free of viruses and Trojans.

IT should begin now to confront the issue of consumer technologies in the workplace and the desire of employees to access work-related data beyond the corporate network. The policies and technologies that enterprises deploy can take a variety of forms. For most scenarios, setting proper policies and keeping track of the latest consumer trends and devices (as opposed to prohibiting devices) will prove to be the most effective way to balance user desires with IT needs. ▸

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READERS' LETTERS

Readers Debate Editor's Google Stance

I AGREE WITH Don Tennant's Jan. 30 editorial, "Outrageous Outrage," and applaud him on two counts. First, he understands that the West needs to take any opportunity it has to provide information to the oppressed Chinese people. Second, he sees that by not cooperating with the U.S. government in its efforts to safeguard the Child Online Protection Act, Google missed a huge opportunity to not "be evil." Besides, the Chinese people know that their results are being filtered. The more they can be exposed to Western civilization and its worldview, the better.

James F. Reggio
Executive technology consultant, Flower Mound, Texas, jim.reggio@comcast.net

LET'S FACE IT: Google is a business. Its move into China makes good short-term business sense, despite the hippie-tech appeal of its anticorporate philosophy. However, from a more strategic point of view, Google and others, including Microsoft, that have caved in to China's demands should look for a way to turn their deals to the benefit of the rest of the world. One possible compromise: We will let you filter out information, but you have to reduce or end the creation and distribution in China of unlicensed software and stop the attempts from China to enter other people's computers or networks. This would allow an oppressive government to continue to throttle the pace of change in its country while reducing its negative impact on its neighbors. Google, Microsoft and all the others that are over there would look like saints for championing some causes that are dear to the hearts of many here at home. If they spent their political capital that way, China would have some strategic technology partners, and we could acknowledge that the bottom line is the driving factor in American business but still feel that we made an attempt to do some good in the world.

R. Otto
IT professional, Milwaukee, tygernet@hotmail.com

"ENGAGEMENT" with China has been the misguided, ineffective policy of the U.S. for years, and it hasn't worked.

Andy Lewis
IT consultant, Madison, Wis.

DON TENNANT is half right. What Google has done in China is the only way to avoid being firewalled completely out of that country. But giving database information to the U.S. government would be wrong. The subpoena has the smell of a fishing expedition for information that has no relevance to the case in question.

How would you like to have *Computerworld*'s subscriber database placed in the public record because the government decided to subpoena it for some reason that can't be explained other than being "for the children"?

Rich Tietjens
IT tech, Tualatin, Ore.

I GUESS ON the Google "evil scale," the U.S. government and children are more evil than the Communist Chinese government. I love Google's service, but it needs to rethink its priorities.

K.C. Broadhead
Ogden, Utah

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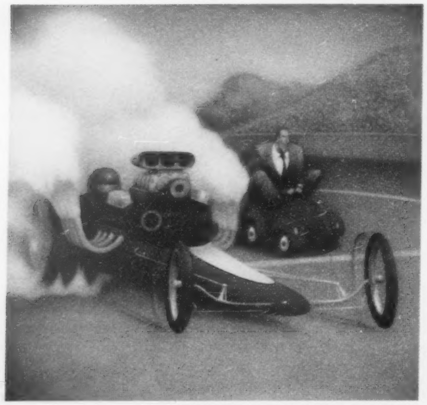

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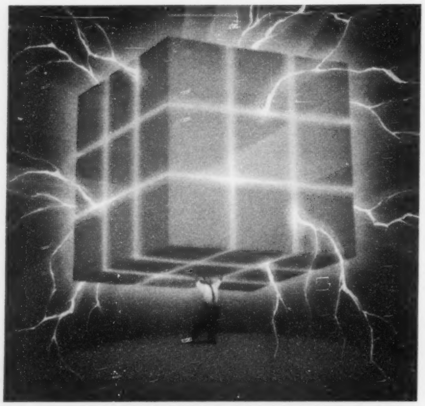

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TECHNOLOGY

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Q&A

Virtualization's Real Impact

VMware co-founder Mendel Rosenblum discusses how virtualization is changing the IT landscape — from operating systems to PCs and servers. **PAGE 34**

QUICKSTUDY

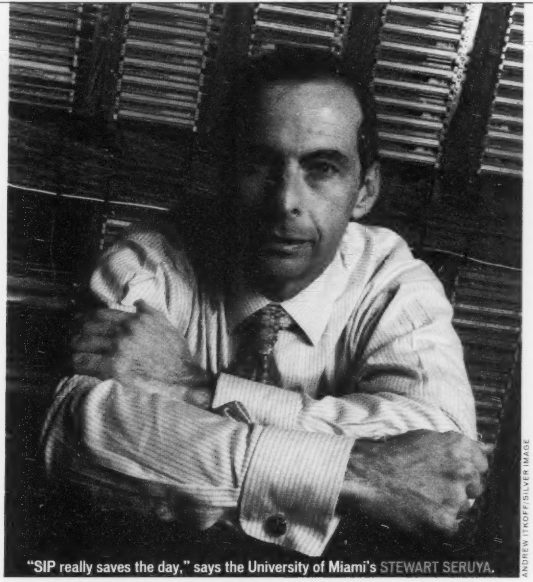
MIMO

Multiple-input, multiple-output is a wireless communications technology in which both transmitters and receivers use multiple antennas to minimize errors and optimize data speed. **PAGE 36**

SECURITY MANAGER'S JOURNAL

LDAP Syncing Project Won't Be a Trivial Task

Automating the process of terminating former employees' accounts is a project partly driven by Sarbanes-Oxley, but Mathias Thurman finds that it also just makes good security sense. **PAGE 38**



"SIP really saves the day," says the University of Miami's STEWART SERUYA.

ANDREW ITKOFF/SILVER IMAGE

Unifying FORCE

Session Initiation Protocol is hailed by some as the key to making unified messaging projects easy and cheap enough to be practical. **BY JENNIFER McADAMS**

A UNIVERSITY OF MIAMI instructor hurriedly checks his voice mail using a laptop to access his e-mail in-box hosted on the school's Web site. Miles away, the "message waiting" light on his desktop phone is instantly extinguished — a sure sign that the school's traditional and IP-enabled private branch exchange systems have responded to its new unified messaging application.

UM systems offer enterprise users a common interface for e-mail, voice mail and faxes. The technology works by snapping up voice messages, often stored as WAV files; converting these audio chunks to text; and depositing them in a user's e-mail in-box. Usually, the applications also wrap in text-to-speech technology to dump written e-mails into voice-mail systems.

On the scene for almost a decade, UM has been saddled with slow adoption rates. Finally, the technology is seeing an uptick among large organizations, thanks in part to an evolving text-based standard: Session Initiation Protocol. SIP lets traditional or mobile phones work together more readily with applications such as e-mail and instant messaging.

"SIP really saves the day, because you can introduce solutions that work not only in the VoIP world but also solve legacy issues as well," says Stewart Seruya, the University of Miami's chief security and network officer.

As is the case with most organizations eyeing UM, interoperability was especially important to the university's technology decision-makers. Seruya and his staff wanted to extend access to unified in-boxes but were under orders not to rip out major existing systems, such as a huge installed base of Cisco switches. Quickly, the message-waiting light became metaphor for interoperability. "That light was the No. 1 metric we used," says Seruya.

Some vendors and many market analysts tout SIP as an easier way to extend UM across an enterprise without having to swap out extensive infrastructures that connect corporations to public switched telephone networks. Yet SIP isn't the only answer.

Many large communications vendors are still offering UM products based on the International Telecommunication Union's *H.323* protocol for enabling IP communication, because *H.323* is far more mature than SIP and contains well-defined call-control features.

"Many products now include both *H.323* and SIP. So legacy vendors may offer SIP enhancements to their current *H.323* platform," says Elizabeth Herrell, an analyst at Forrester Research Inc. in Cambridge, Mass. Communication heavyweights now involved in SIP deployment include Cisco Systems Inc., Nortel Networks Ltd. and Avaya Inc., she says.

Maturing Protocol

SIP is considered less complex than *H.323*. As the protocol matures, SIP will likely gain ground in the UM market — something analysts are already starting to see, say Herrell and others.

Currently, about 15% of major corporations have UM capabilities in place, but another 29% are now seriously considering the technology, according to Forrester.

The University of Miami's UM adoption was slower than expected. For years, the school had considered a major voice-over-IP investment, until IT officials decided in late 2005 to buy Communite, a UM/voice-mail replacement system from Indianapolis-based Interactive Intelligence Inc. Communite's reliance on SIP helped nudge Miami officials into action, and now about 14,000 users have access to UM capabilities, Seruya says.

Other executives have not been so quick to jump on the SIP bandwagon, and they aren't ready to extend UM capability to thousands of users. "We have not found it necessary to make a major move to SIP," says Howie Gold, vice president of IT at House of Blues Concerts Canada (HOB) in Toronto.

HOB organizes shows across Canada — not only in House of Blues nightclubs but also in major venues such as Calgary's Pengrowth Saddledome arena — and its traveling production and sales crews use an array of personal communications devices.

"We saw as our benefits from unified messaging things like reduced cell phone usage, because people would not have to call in and check messages," says Gold. "It was also a potential single point of contact for faxes and e-mails." Yet because UM options on voice-mail replacement systems cost about $100 extra per seat, HOB didn't want to blanket the organization with those features. Instead, a small subset of HOB personnel are offered UM capabilities extended as options on the IP PBX the concert promoter purchased several years ago.

HOB has installed Business Communications Manager (BCM) from Brampton, Ontario-based Nortel. BCM doesn't incorporate SIP, but HOB doesn't need SIP, because its communications infrastructure is built entirely on Nortel equipment. "We are keeping an eye on SIP, because we do think it could ultimately help us lower our bandwidth requirements," Gold says.

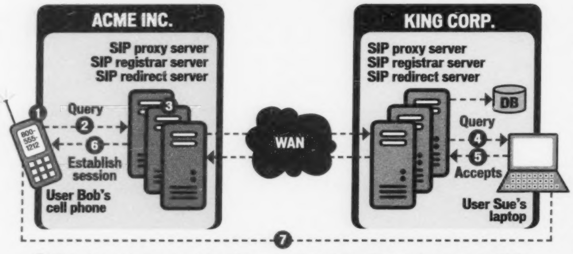
While keeping one eye on SIP, HOB officials are focused on the IT budget. "Unified messaging is a bonus for us because it helps us stay far more connected. But it can be hard to justify to the accountants a $15,000 expenditure that provides us with an icon that says you have a new message," says Gold.

Easier to sell, he says, is the VoIP-related drop in long-distance charges for calls between HOB offices in Toronto and Vancouver. Those costs plummeted from $2,000 a month to $250 upon the adoption of BCM.

VoIP investments with limited UM rollouts are typical, according to Robert Mahowald, an analyst at Framingham, Mass.-based IDC. For instance, if a business installs a voice-mail replacement system to accommodate 1,000 employees, only a portion of those employees are likely to become UM users. "Nine hundred of them will get vanilla voice mail, and 100 will get unified messaging, which is typically limited to high earners and mobile executives," he says.

Such was the case at Stahls' Inc., a St. Clair Shores, Mich.-based manufacturer of imprint graphics used by garment manufacturers to decorate apparel with sports logos and other designs.

HOW SIP WORKS



① User Bob, who works at Acme Inc., requests a session with user Sue, who works at King Corp.
② Bob's user agent client sends a query to Acme's SIP proxy server on how to reach Sue.
③ Acme's SIP proxy server retrieves Sue's network address from Acme's SIP registrar server.
④ Acme's SIP proxy server sends an invitation to Sue's laptop over the WAN that links the companies and through the King SIP servers.
⑤ Sue informs King's proxy server that she will accept the message.
⑥ King's proxy server relays acceptance to Bob via the WAN and Acme's SIP servers and establishes a session.
⑦ Real-Time Transfer Protocol or media path provides a point-to-point connection.

"We are licensed for about one-third of our workforce. This is a proper mix for us between traveling, remote and power users who would utilize the features," says Michael Terenzi, manager of IT/telecommunications operations.

Stahls' deployed its UM capabilities through the adoption of a new HiPath 4000 switch and Xpressions 4.0 unified messaging system from Siemens Communications Inc. in Boca Raton, Fla.

As was the case with HOB, SIP didn't play a huge role in Stahls' UM applications. "SIP really wasn't a factor in our decision," says Terenzi. "But I do think SIP will make the market competitive."

Industry analysts such as Herrell and Mahowald agree that the fact that SIP promises to one day knock down the price per UM seat is currently the most attractive aspect of the protocol, which was spun out of the Internet Engineering Task Force (IETF) as a signaling protocol for peer-to-peer multimedia applications.

"SIP may over time help vendors lower their cost structures," says Mahowald. "Since it has been ratified by the IETF, SIP has been generating a buzz. Many enterprises figure if they are buying UM solutions, they might as well be SIP-compliant. But SIP itself doesn't really make a tremendous amount of difference to users right now."

Sean McRae, vice president and chief technology officer at Prudential Northwest Properties in Portland, Ore., echoes that assessment when he describes his company's decision to purchase a SIP-based IP PBX system from 3Com Corp. in Marlboro, Mass. "SIP played a role in the process, but I don't really think about it. It's transparent," he says.

What companies do think about are the concrete returns on investment available through VoIP purchases — ROI that can be enhanced easily by adding UM options, which are in turn made easier to deploy using SIP. For instance, officials at the National Institutes of Health Federal Credit Union in Rockville, Md., purchased Interactive Intelligence's Customer Interaction Center IP PBX, which is based on SIP technology, under the premise that the equipment would yield definitive returns plus "soft" UM gains.

"We expect to pay for the system in hard costs with the offset of additional maintenance, voice circuits and equipment," says Kirk Drake, vice president of IT. "However, the true ROI, we believe, is in the soft costs and the ability to keep our associates more directly connected to our members." ▸

McAdams is a freelance writer in Vienna, Va. Contact her at jjwriterva@aol.com.

A **BOOST** From Redmond

ALONG WITH THE BOOST unified messaging is enjoying from SIP, the technology is expected to get another shot in the arm later this year or in early 2007, when Microsoft Corp. releases Exchange 12, which will include a UM component.

"Users will benefit because they will no longer require a proprietary unified messaging server that has limited interoperability with voice servers but can support a mixed telephony environment of both IP and [time-division multiplexing] systems," says Elizabeth Herrell, an analyst at Forrester Research, in a January report titled "Unified Messaging Is on the Rebound."

"Unified messaging is really an old architecture. It has been around since the mid-'90s. There is a shift happening, because Microsoft is getting into the business. Still, you can't really say that things will change overnight," adds Herrell.

Also changing the UM landscape – though also not overnight – is the introduction of stand-alone appliances that pull voice into a single stream of data on a message server, says Herrell, who cites systems from Adomo Inc. as an example.

Adomo offers voice messaging appliances that support 500, 1,000 or 2,000 users and can be stacked and clustered alongside private branch exchanges to convert voice streams into text-based Exchange data, according to company representative.

IT executives at SI International Inc., a large government contractor in Reston, Va., plan to use Adomo appliances to help outfit a new office campus in Colorado Springs, says CIO Steve Hunt. Specifically, the company will interface Adomo's voice-mail appliance with an existing PBX from Nortel and a local Microsoft Exchange server.

Like officials at many enterprises, SI International executives describe the company's UM foray as serendipitous. "We did not create a unified messaging goal or objective. Instead, this strategy is being driven by more immediate and practical decisions," says Hunt. "But our users love the ability to control the forwarding of their calls and the advantage of forwarding voice messages to their Microsoft Office mailbox."

– JENNIFER McADAMS

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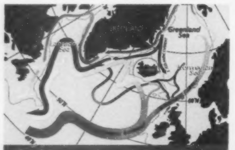
Geek's Garden

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

Computer Model Confirms Ancient Flood

SCIENTISTS AT NASA and Columbia University in New York have used computer modeling to successfully reproduce an abrupt climate change that took place 8,200 years ago. At that time – the beginning of the current warm period – climate changes were caused by a massive flood of fresh water into the North Atlantic.

This work is the first to consistently re-create the event by computer modeling, and the first time that the model results have been confirmed by comparison to the climate record, which includes ice-core and tree-ring data.



On this map of circulation patterns in the North Atlantic Ocean, cold, dense water is shown in blue, flowing south from upper latitudes, while warm, less-dense water flows north.

JACK COOK FOR WOODS HOLE OCEANOGRAPHIC INSTITUTION

"We only have one example of how the climate reacts to changes – the past," said Gavin A. Schmidt, a researcher at the NASA Goddard Institute for Space Studies (GISS) and co-author on the study. "If we're going to accurately simulate the Earth's future, we need to be able to replicate past events. This was a real test of the model's skill."

The study was led by Allegra LeGrande, a graduate student in the department of earth and environmental sciences at Columbia. The results appeared in the journal *Proceedings of the National Academy of Sciences* in January.

The group used an atmosphere-ocean coupled climate computer model known as GISS Model E-R to simulate the climate impact of a massive freshwater flood into the North Atlantic that happened after the end of the last Ice Age. Retreating glaciers opened a route for two ancient meltwater lakes, known as Agassiz and Ojibway, to suddenly drain from the middle of the North American continent.

According to the model, temperatures in the North Atlantic and Greenland showed the largest decrease, with slightly less cooling over parts of North America and Europe.

The rest of the Northern Hemisphere, however, experienced very little effect, and temperatures in the Southern Hemisphere remained largely unchanged.

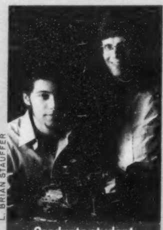
Moreover, ocean circulation, which initially dropped by half after the simulated flood, appears to have rebounded within 50 to 150 years. ◗

GROVES OF ACADEME

Answers Without Questions

BY COMBINING quantum computation and quantum interrogation, scientists at the University of Illinois at Urbana-Champaign have found an exotic way of determining an answer to an algorithm – without ever running the algorithm.

Using an optical-based quantum computer, a research team led by physicist Paul Kwiat has presented the first demonstration of "counterfactual computation," inferring information about an answer even though the computer did not run. The researchers reported their work in the Feb. 23 issue of *Nature*.



L. BRIAN STAUFFER

Graduate student Onur Hosten (left) and professor Paul Kwiat

Quantum computers could solve certain types of problems much faster than classical computers. Speed and efficiency are gained because quantum bits can be placed in superpositions of one and zero, as opposed to classical bits, which can only be either one or zero. Moreover, the logic behind the coherent nature of quantum information processing often deviates from intuitive reasoning, leading to some surprising effects.

"It seems absolutely bizarre that counterfactual computation – using information that is counter to what must have actually happened – could find an answer without running the entire quantum computer," said Kwiat.

Sometimes called interaction-free measurement, quantum interrogation uses wave-particle duality (in this case, of photons) to search a region of space without actually entering that region.

Using two optical interferometers nested within a third, Kwiat's team succeeded in counterfactually searching a four-element database using Lov Grover's quantum algorithm for searching unsorted databases. "By placing our photon in a quantum superposition of running and not running the search algorithm, we obtained information about the answer even when the photon did not run the search algorithm," said graduate student Onur Hosten, lead author of the paper.

"In a sense, it is the possibility that the algorithm could run which prevents the algorithm from running," Kwiat said. "That is at the heart of quantum interrogation schemes, and to my mind, quantum mechanics doesn't get any more mysterious than this." ■

DIFFERENCE ENGINES

Move Over Mr. Turing

PROVING THE OLD ADAGE that a good idea has many fathers, some scholars believe that one of the fathers of computing is Panini, an ancient Sanskrit grammarian who, according to commonly accepted estimates, lived in the fifth century B.C. Almost nothing is known for certain about Panini's life. Tradition has it that he was born near the Indus River in what's now Pakistan.

Panini's grammar for Sanskrit is highly systematized and technical. Inherent in its analytic approach are the concepts of the phoneme, the morpheme and the root, not recognized by Western linguists until some two millennia later. His rules have a reputation of perfection – that is, they are claimed to fully describe Sanskrit morphology, without any redundancy. A consequence of his grammar's focus on brevity is its highly nonintuitive structure, reminiscent of contemporary "machine language" (as opposed to "human-readable" programming languages).

5.00
पाणिनि PANINI
भारत INDIA
2004

An Indian postage stamp depicting Panini

Panini uses metarules, transformations and recursions with such sophistication that his grammar has the computing power equivalent to that of a Turing machine. In this sense, Panini may, indeed, be considered the father of computing machines. His work was also the forerunner to modern formal-language theory.

Paninian grammars have also been devised for non-Sanskrit languages. The Backus-Naur form (sometimes called the Panini-Backus form), or BNF, grammars used to describe modern programming languages are similar to Panini's grammar rules.

It's not even known whether Panini used writing for the composition of his work. Some historians argue that a work of such complexity would have been impossible to compile without written notes, while others allow for the possibility that he might have composed it with the help of a group of students whose memories served him as "notepads."

E-mail 2006

22% of the global e-mail user population resides in North America.

44% of worldwide e-mail users are under the age of 29.

35% of the corporate e-mail installed base is related to small business.

69% is the projected growth rate in the installed base in the unified communications segment of the telecom market from 2006 to 2009.

SOURCE: THE RADICATI GROUP INC., PALO ALTO, CALIF., FEBRUARY 2006

Page compiled by Tommy Peterson.

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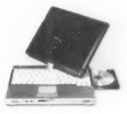

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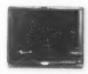

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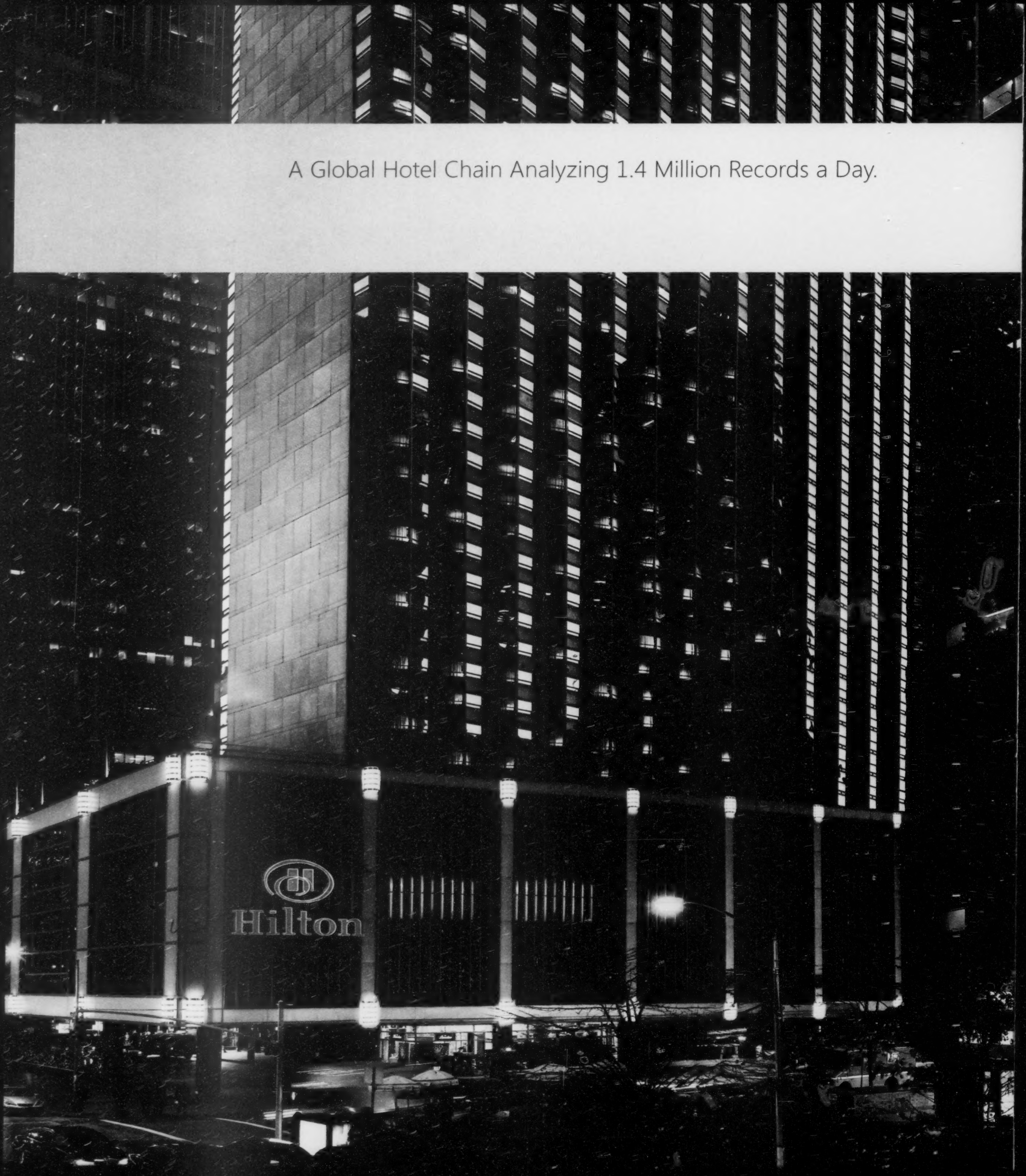

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MIMO

DEFINITION

Multiple-input, multiple-output is a wireless communications technology in which both transmitters and receivers use multiple antennas to minimize errors and optimize data speed. MIMO takes advantage of signals reflected off of nearby surfaces or objects before arriving, via multiple paths, at the receiver.

BY RUSSELL KAY

QUICK STUDY

IT SEEMS like hardly yesterday (well, five years ago) that fast, inexpensive wireless networks were a far-off dream. But Wi-Fi (wireless service based on the IEEE 802.11 standards) came along like gangbusters in the early 2000s; it worked so well and cost so little that it became an instant success both in home and business environments. Although limited in throughput, compared with modern gigabit wired LANs, even the slowest Wi-Fi networks were still a good match for the newly expanding home broadband market being pushed by cable operators, phone companies and others.

Coupled with the availability of sub-$100 router/access-point/firewall appliances, wireless networking became a simple reality in many homes and offices, where multiple computers and simultaneous computer users became the rule, not the exception. After 802.11b came 802.11a, which was five times faster, and then the now nearly universal 802.11g.

For the immediate future, a new refinement of that wireless technology promises to resolve many of the original concerns and offers even greater throughput and reliability. Called MIMO, short for multiple-input, multiple-output, it involves the use of two or more antennas on both transmitters and receivers.

MIMO Magic

The magic of MIMO lies in its ability to take multipath reception, which used to be an unavoidable byproduct of radio communications, and convert it into a distinct advantage that actually multiplies transmission speed and improves throughput.

First, let's look at multipath radio reception. Say you're in a car in downtown Manhattan listening to the radio. You know that your car's antenna is receiving the direct signal from the station's transmitter. But your radio is also receiving additional signals of that same broadcast from many different directions, because buildings, wires, geographical features and other structures in the area between the sender and the receiver can reflect or refract those signals. The end result is that each of these additional signals arrives at your car radio via a different path (hence the term *multipath*) and also at a slightly different time, so that it's out of phase with the original and will randomly boost or cancel out parts of the signal.

This phase differential introduces noise and distortion that you can hear as the car moves within the city, in the form of signal fading, intermittent reception (also called picket-fencing) and sudden signal dropouts. In digital communications, these factors can cause a reduction in data speed and an increase in the number of errors.

Adding antennas, as some wireless systems do, helps sort out signals, allowing the receiver to pick the antenna getting the strongest signal at any given point. How many antennas? Netgear Inc. in Santa Clara, Calif., recently offered products using seven internal antennas, which combine to create up to 127 different antenna patterns. This is called diversity reception, and though it's not a true MIMO, it's just the start of what can be done with multiple antennas.

MIMO can use the additional signal paths to transmit more information and recombine the signals on the receiving end. It's analogous to our ability to readily localize, using just our two ears, the origin of specific sounds or to isolate and understand one conversation fragment from the midst of assorted cocktail party chatter. Using multiple receivers in this way isn't a newly discovered phenomenon; it's been used in some radio transmission for at least half a century. But until recently, the amount of signal processing needed has been too expensive to be practical. An important factor driving MIMO acceptance today is the advent of inexpensive, high-speed chips with millions of transistors.

MIMO systems can use spatial multiplexing to distinguish among different signals on the same frequency. Moreover, we can encode these transmissions so that information on each can be used to help reconstruct the information on the others. Called space-time block coding, you can think of this as akin to parity or other error-detection and -correction schemes — they allow us to increase reliability in addition to pure throughput. ◗

Kay is a Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

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MIMO AND PRE-N

AS MIMO MOVES toward incorporation in the 802.11n standard, several companies, including Belkin Corp., Netgear and Cisco-Linksys LLC, have brought out a number of products they call "pre-N."

Using Palo Alto, Calif.-based Airgo Networks Inc.'s "True MIMO" chips, these products don't claim that they will be able to work with future 802.11n-based products, but merely that they are related to the technology.

While these products show advantages over older technologies, analysts warn that users should be aware that they are definitely early-adopter products that won't be the final answer and may not work with future products based on the final standard.

– RUSSELL KAY

The Battle for 11n

WHEN WE TALK of the IEEE's forthcoming 802.11n standard for high-speed (200Mbit/sec. and up) wireless networks, it's important to note that we're not yet sure what technology it will encompass. Currently, two groups are pushing different approaches. One consortium is the World Wide Spectrum Efficiency (WWiSE), and the other has the rather odd name of TGn Sync (short for Task Group N of the IEEE 802.11 Working Group). First proposals were made in 2004, and there is little hope for agreement before this summer.

TGn Sync is a group of more than 25 companies across cellular, computing, consumer electronics, enterprise networking, mobile radio, public access and semiconductor markets. It is spearheaded by Agere Systems Inc., Atheros Communications Inc., Intel Corp., Nokia Corp., Philips Electronics NV and Sony Corp. The TGn Sync proposal expects to deliver speeds of around 313Mbit/sec. using two antennas and 40-MHz channels.

WWiSE is led by MIMO pioneer Airgo Networks Inc., with other wireless chip-set manufacturers, including Broadcom Corp., Conexant Systems Inc., STMicroelectronics NV and Texas Instruments Inc. The WWiSE proposal requires only a 20-MHz channel (which the group believes is friendlier to all countries) and provides better efficiency. Speeds would start at 135Mbit/sec., with two transmitting antennas mandatory. More antennas would be optional, as would a 40-MHz mode, and these could drive data rates up to 540Mbit/sec.

Currently, TGn Sync's proposal has more proponents but still not enough support for a final decision. In the end, whichever proposal can win 75% of the vote will determine the standard. Best guess is that an 802.11n specification will be published in 2007.

– RUSSELL KAY

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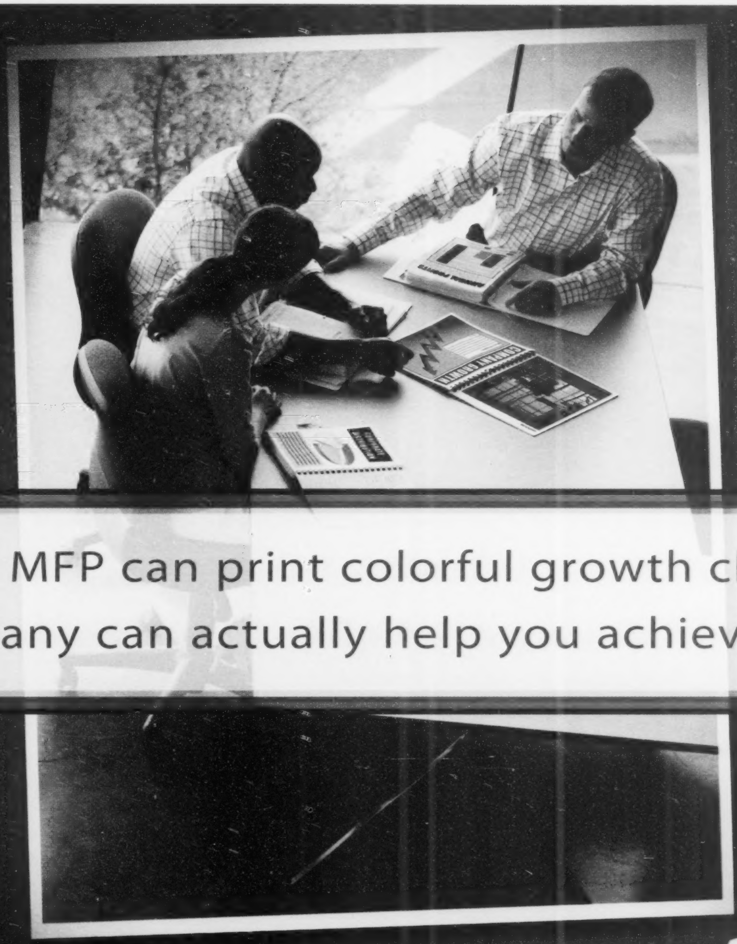

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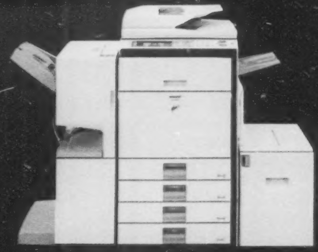

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LDAP Syncing Project Won't Be a Trivial Task

Automating termination of system access is partly inspired by Sarb-Ox, but it makes good security sense. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

I'M HELPING another IT manager with a strategic objective to automate account termination.

The project certainly has security implications, but I have another incentive to help out. All managers in my company are eligible for bonuses at the end of the fiscal year (which comes at the end of June), and these bonuses depend in part on meeting personal and departmental strategic objectives. One of my personal strategic objectives, for example, is to successfully deploy laptop encryption. If I don't do this by a certain date, I lose points that are used to calculate my bonus. And my peers lose points as well.

So we are motivated to help one another, and that's part of the reason why the project for automating account termination drew my attention.

Simply stated, we want to ensure that former employees can't gain access to any of our systems or the network. Doing so is a control objective tied to compliance with the Sarbanes-Oxley Act, but it's also a strategic objective of the company. Ultimately, we want the automated system to work so that when the human resources department marks an employee's PeopleSoft account as terminated, a series of activities will be triggered to automatically remove or disable that user's account from other user account repositories.

We use Microsoft Active Directory (AD) as our main directory infrastructure, and we have configured it so that users' accounts are automatically removed when they are marked as terminated in the PeopleSoft database. Those deletions mean that terminated employees no longer have access to Microsoft Exchange, file shares, SharePoint, our single sign-on infrastructure and several other applications.

The problem is that when a person is no longer allowed to access our systems, the process will have to include the automatic termination of RSA SecurID accounts. We currently use SecurID tokens to provide two-factor authentication to two main environments: our virtual private network and our extranet portal. Regular employees are authorized for VPN access, and portal access is extended to suppliers, partners and contractors. Using the portal across a Secure Sockets Layer VPN, these third parties get a controlled subset of access to our company's internal resources.

Eventually, I plan to expand SecurID two-factor authentication for gaining access to our network gear (i.e., routers, switches and firewalls) and our Unix and Windows NT servers, and to integrate it into core applications, such as SAP and our upcoming product life-cycle management infrastructure. Shutting former employees out of the SecurID authentication server is a big part of keeping them out of company resources.

> Making sure that a single person isn't listed under different usernames takes time, especially with more than 5,000 users.

The RSA server's database can be synchronized with external Lightweight Directory Access Protocol (LDAP) directories such as AD. But currently, when we disable users from within AD, they aren't automatically removed from within the SecurID token database. Terminated users who have a token and the company's VPN client can gain access to our internal network. They may not have access to the Windows domain because their AD accounts have been terminated, but they are on the network nonetheless, and that's unacceptable from a security perspective. We have to configure our SecurID server to synchronize its user database with AD.

Syncing Feeling

That task isn't trivial. If a mistake were made, we could completely wipe out or corrupt the SecurID database. Of course, we'll test this change in a lab environment and back up the existing database, but wiping out the database is still a scary thought.

In addition, quite a bit of prep work has to be done. Because the synchronization process is tied to employees' usernames, we must ensure that the usernames within the SecurID database are identical to those in AD. Account reconciliation — making sure that a single person isn't listed under different usernames — takes time, especially with more than 5,000 users in the database. And when we find a user who has more than one username, we'll have to communicate our changes to the user in question.

The SecurID server offers a fair amount of flexibility in how we conduct the synchronization. We plan to run the synchronization so that regular employees will be automatically added to a SecurID group that grants them VPN access, while contractors, partners and other nonemployees will be added to a default group with no access. We'll be able to do this by configuring multiple LDAP synchronizations.

Users properly registered in AD with a correct username will automatically gain access to the things they should gain access to. Partners, for example, will have SecurID access to the partner portal but not the VPN concentrator. And when the synchronization determines that a particular user no longer has an AD entry — in other words, that the user is no longer an employee or some kind of partner — then the user will automatically be deleted from within the SecurID server and his token will be placed back into the available token pool.

Once we extend the SecurID infrastructure to other areas, we will be able to conduct synchronizations to place, for example, network or Unix engineers in groups that give them SecurID access to the network or the server infrastructure.

If this project is executed properly, we will have an end-to-end process for automatically creating and terminating accounts. And that process will not only satisfy our Sarbanes-Oxley control needs and our corporate strategic objective, but also provide a more secure means of minimizing risks to the company. ▸

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

Software Security: Building Security In, by Gary McGraw (Addison-Wesley Professional, 2006). Building security into software is probably one of the more difficult practice areas of information security. McGraw explains the process and reviews the tools and methodologies for creating secure applications and auditing existing ones. The author's explanations of the current application security audit tools are very informative. This is a must-read for application developers and should be a standard title for all information security professionals.

– Mathias Thurman

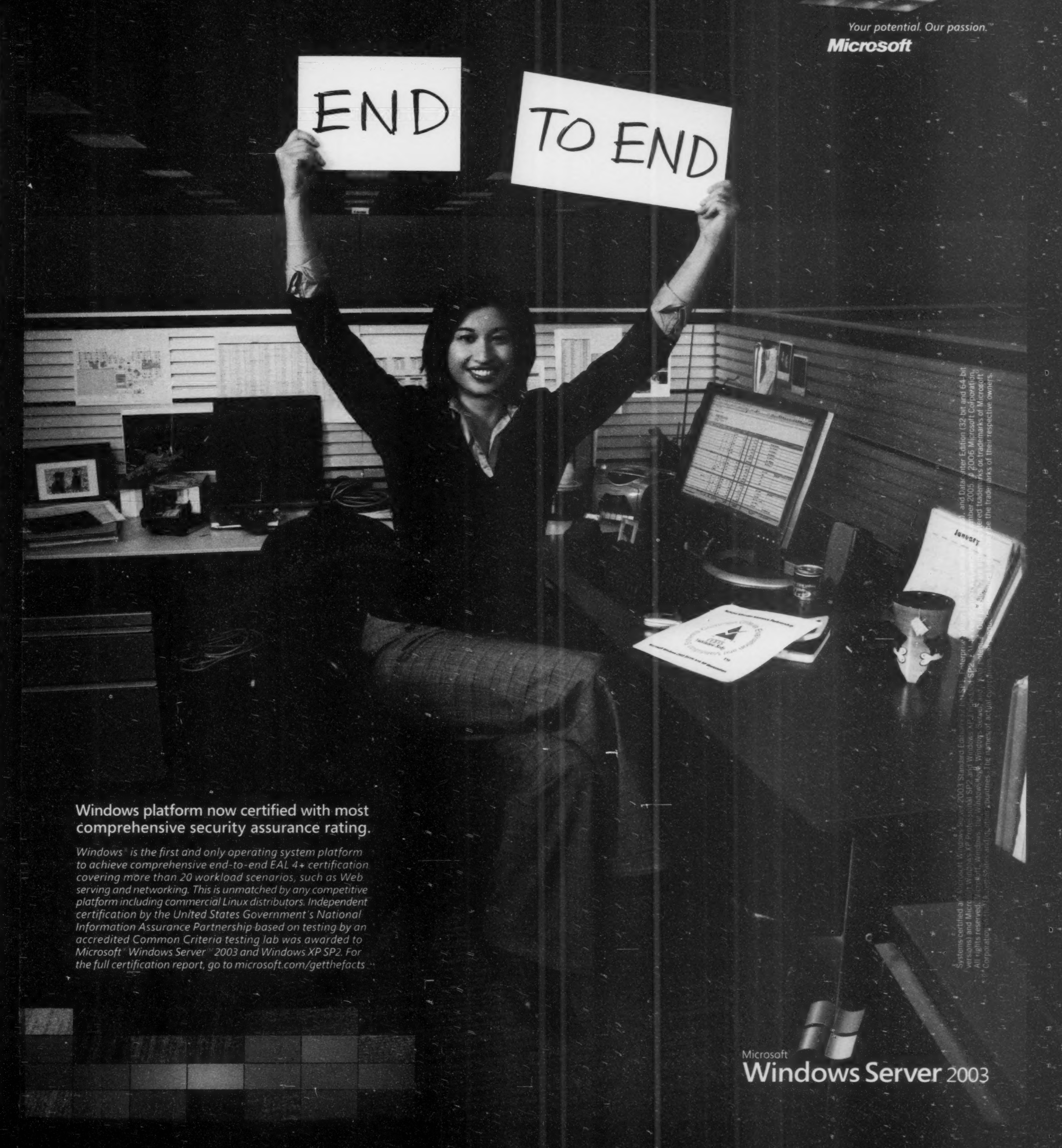
Addison-Wesley Software Security Series
SOFTWARE SECURITY
BUILDING SECURITY IN
GARY McGRAW

Firefox Tops IE in Bug Count – or Not

Symantec Corp.'s Internet Security Threat Report now features two ways of counting browser bugs. For vulnerabilities confirmed by the vendors, Mozilla Corp.'s Firefox was the leader in the second half of 2005, with 13. But when bugs that weren't vendor-confirmed were included, Microsoft Corp.'s Internet Explorer led, with 24. The Mozilla Foundation had criticized Symantec's previous methodology because Microsoft tends to group vulnerabilities together, whereas Mozilla announces each one individually.

Botnets Targeted

Several security researchers have joined forces to try to find and disable the servers used by botmasters to control their botnets. They want Internet service providers and IT administrators to share information on botnet activity.



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Systems certified are Microsoft Windows Server 2003 Standard Edition (32-bit SP1), Enterprise Edition (32-bit and 64-bit SP1), and Datacenter Edition (32-bit and 64-bit versions) and Microsoft Windows XP Professional SP2 and Windows XP Embedded SP2. EAL 4+ certification achieved in December 2005. © 2006 Microsoft Corporation. All rights reserved. Microsoft, Windows, the Windows logo, Windows Server, and "Your potential. Our passion." are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

Microsoft
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BRIEFS

InfoStreet Releases StreetSmart 7.0

▪ InfoStreet Inc. has released the latest upgrade to StreetSmart, its suite of productivity software that's delivered through the Internet. Version 7.0 includes enhanced tools for customizing the interface, faster deployment, 100% Web-based management and configuration, and enhanced address book and calendaring tools, according to the Tarzana, Calif.-based company. InfoStreet claims that thousands of companies in North America are subscribers. Pricing begins at $6 per user per month for one to 10 users, and the price goes down to $3 per month for groups with 200 or more users.

Fluke Updates VoIP Monitoring Software

▪ Fluke Networks has announced the availability of Visual UpTime Select 2.0, which is designed to monitor voice-over-IP network performance and check for network configuration problems. The cornerstone of the release is the ability to monitor mean opinion scores that represent end-user quality of experience for every actual call placed at every site throughout the network, according to the Everett, Wash.-based company. The module is available now for $795 per site.

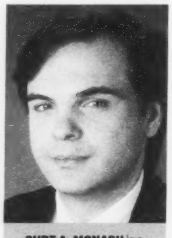
Appian Announces Upgraded BPM Suite

▪ Appian Corp. has unveiled Appian Enterprise 5, a new release of its business process management suite. The product features improved support for Web services, an integrated Java Messaging System middleware infrastructure and complete integration with Microsoft Outlook, Vienna, Va.-based Appian said. Enterprise 5 also includes a more advanced service-oriented architecture and an enhanced events architecture and is fully Unicode-compliant for international use. Enterprise 5 is available now, starting at $25,000. An average license contract is $145,000, the company said.

CURT A. MONASH

Voice of the Geek Needed In Public Policy Debates

IF YOU'RE READING THIS, your friends and family almost certainly regard you as a technology expert. You've advised them on computer hardware purchases, security setups, software, online services and perhaps other IT matters as well. But there's another area where your technologically informed voice should also be heard yet probably isn't. I'm talking about the IT-related issues of public policy.



CURT A. MONASH is a consultant in Acton, Mass. You can reach him at **curtmonash@monash.com**.

Whatever your nationality or partisan leanings, there are several groups of highly important IT-related issues that your technologically challenged political leaders are at risk of botching. Those issues include the following:

▪ **Privacy and liberty,** especially in developed countries, but even more so in certain less-developed nations.

▪ **Economic development,** especially in developing countries.

▪ **Education,** in developed and developing countries alike.

Space permits me to address only the first of these issues in this column.

There's been a lot of news coverage recently about the Chinese government's efforts to censor the Internet and U.S. companies' collaboration in these efforts. And China isn't the only such country; for example, several Arab countries have long had national Web censorware. Indeed, rulers know that few things undermine repressive governments as much as access to outside media. Western TV famously showed Eastern Europeans that their governments' propaganda was false. A few years earlier, smuggled cassette tapes of the Ayatollah Khomeini's speeches helped foment revolution against the Shah of Iran.

And so the Chinese government's massive effort to control public access to the Internet can be rather straightforwardly understood.

In the West, however, it appears that the mechanisms of repression are falling into place almost by accident. There are few cases yet of technology being deployed to actually curb anyone's freedoms, and there is perhaps no single country where the laws are a major threat — yet. But if you connect the dots on the scariest bits of legislation and public practice in each of several countries, a worrisome picture emerges.

In the U.S., for example, the government asserts that it can data-mine almost whatever it wants looking for patterns. It doesn't matter if an individual police officer can't tap one phone call; what's forbidden case by case is supposedly allowed in the aggregate.

Meanwhile, for security reasons in the U.S. and antipiracy reasons in Europe, there are a variety of rules requiring service providers to keep records of Internet and other telecommunications activity.

In Europe, antipiracy legislation is even trying to make it illegal to disguise the IP address that you're logging on from. And the use of this kind of information is more than theory — in the U.S., the Web-searching activity of people accused of crimes has been submitted to courts as proof of criminal intent.

And it's not just communications themselves; transactional activity is tracked even more heavily. Consumer credit bureaus record and sell 1,000 columns or so of data on individuals. Almost all of your purchases (i.e., the ones made online and/or by credit card) are matters of record. Even automobile movements are traced in more and more locales, photographically and/or via electronic toll payments.

The rise of two-factor authentication will make this trend even more pronounced, as identification documents take on electronic characteristics. National ID cards are being suggested in many countries, for health care if nothing else. Passports are also being equipped with RFID and/or biometric technologies.

In short, almost every detail of your life can, at least in theory, be technologically captured by the government, if not now, then in the near future. And that's even after we account for the normal snafus of technological progress.

What, then, are the public policy choices? Here are a few:

- Do nothing.
- Maintain sharp limitations on government acquisition and retention of information.
- Mandate that the government keep its information in separate silos.
- Create strong rules about how governments can use information after it is acquired.
- Hamstring corporate acquisition, retention or use of information. (Much of the government's potential data comes through private channels.)
- Various combinations of the above.

I have developed my own views on these points, and you can find them, along with a lot of links to related news, at *www.monashreport.com/category/public-policy-and-privacy/.*

You are also heartily invited to comment and debate there. But even more important, I encourage you to develop your own views on these issues and then share them widely. These matters are too important to be left to the technologically clueless. ▸

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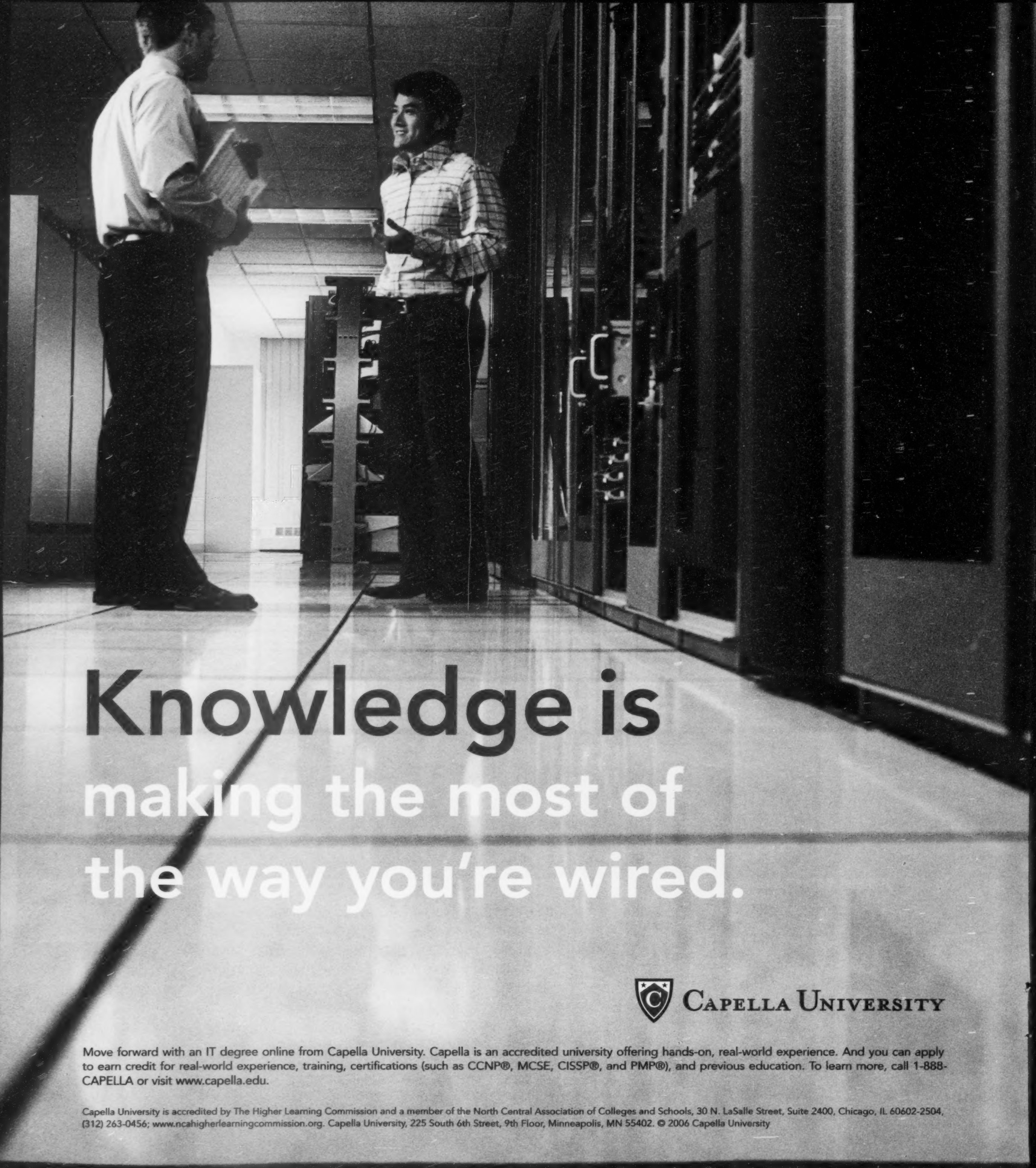

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How to Talk Business
CIOs are under pressure to translate proposed initiatives into business terms — even if the ROI is hard to quantify. Here's how. **PAGE 46**

Mission: Education
Australia's Defence Online Campus delivers courses to nearly 100,000 military and civilian personnel, earning it a 2005 *Computerworld* Honors award. Brett MacDonald, director of flexible learning at the Australian Defence Organisation, accepted the award. **PAGE 48**

OPINION
Outsourcing: Out of Sight, Out of Mind?
A recent lawn-care outsourcing debacle reminds Bart Perkins that you can outsource an IT function but never its management. **PAGE 52**

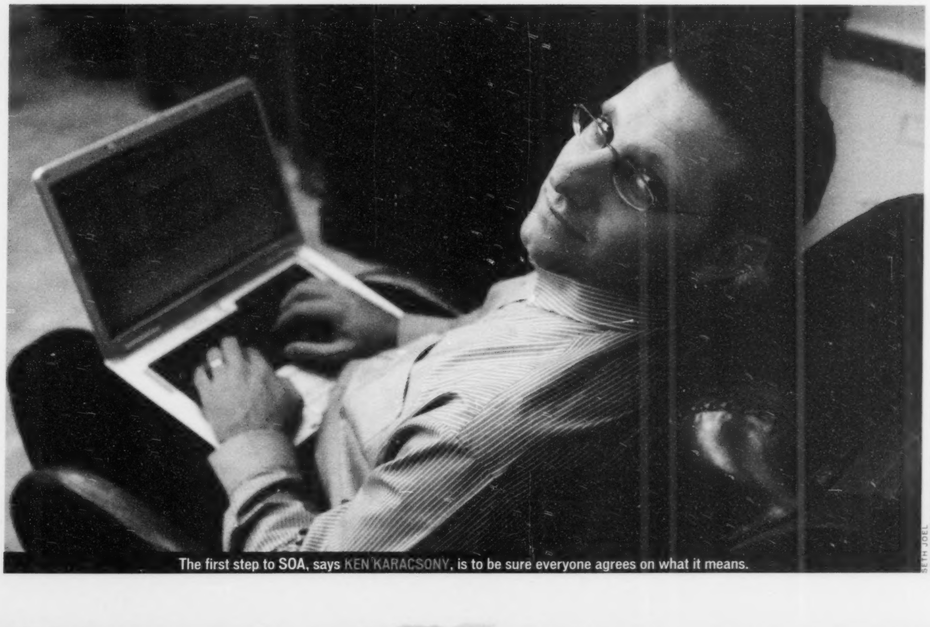
[FOUR STEPS TO SOA]

Migrating to service-oriented architecture can be daunting. Here are some guidelines to help.

By Ken Karacsony

IT MENTOR

THE LATEST architectural revolution to strike IT is service-oriented architecture. IT managers are not only excited about the promise of SOA, but also fearful of this new paradigm and the impact it will have on the organization. Here are four simple steps you can follow to ensure a smooth transition to SOA.



SETH JOEL

The first step to SOA, says KEN KARACSONY, is to be sure everyone agrees on what it means.

1 DEFINE SOA

If you are implementing service-oriented architecture, the most important point to remember is that your IT organization must have a clear understanding and definition of it.

Ask five IT professionals exactly what SOA means, and you are likely to hear five different answers. That's because such architectures are rapidly evolving.

But that's OK. It's not critical that the IT industry reach a consensus on a definition. But it is vital that everyone in your IT organization agrees upon exactly what SOA means to the company.

I recommend that you research respected IT literature on SOA and develop a definition that makes sense for your organization. You may also wish to consult experts in the field who can work with you to define an architecture based on your company's unique requirements. SOA is flexible enough to accommodate a variety of integration challenges.

The key take-away is that your company must *own* the definition that it develops. Everyone in the IT organization must understand the definition, fully support the new paradigm and align resources to make it happen.

2 TRAIN STAFF

For many companies, SOA is a radical departure from traditional architectures that are based on tightly coupled application interfaces. Consequently, there may be a steep learning curve to understanding SOA. Training and education are absolutely essential to flatten the curve.

I recommend a top-down training approach. First, educate senior management on the fundamental tenets of SOA and the benefits of deploying it. This is critical. If the CIO, for example, is unable to grasp the basic methodologies and goals of the architecture, then he will not be able to support it.

Once you have trained upper management, proceed to lower-level man-

WHAT'S SOA? THINK eBay

TO HELP UNDERSTAND SOA, I LIKE TO USE THE EXAMPLE OF EBAY. Thousands of people shop on eBay Inc.'s online auction site every day, hoping to find exceptional deals on merchandise offered by eager sellers. EBay acts as the middleman, providing an integrated service to connect buyers and sellers through one common interface.

There are several reasons why eBay is so successful. First, it's easy to use. It doesn't take much time or effort to set up an account to buy and sell. Second, it's a one-stop shop for both buyers and sellers; a buyer, for example, is able to peruse a vast array of products in one place. Third, it's incredibly flexible. A buyer can act as a seller without establishing multiple accounts. Fourth, eBay provides all of the services, thereby insulating buyers and sellers from what is taking place behind the scenes.

If you understand these basic mechanics of eBay, then you're well on your way to understanding how a service-oriented architecture works.

Think of the applications in your company as buyers and sellers on eBay. Some applications are providers of information (sellers), while others act as consumers (buyers). These roles can and do switch, depending on the context of the transaction. One consuming application can just as easily be a provider to another consuming application.

To make it work, there must be a common, standards-based interface (similar to eBay's Web site) that both consumer and provider applications access to broker transactions. They communicate with one another via messages enabled by reusable services within the common interface rather than through point-to-point software that is tightly coupled.

Although this description is rudimentary, this is basically the way in which a service-oriented architecture functions.

– KEN KARACSONY

agers. They must not only be educated in the overall goals and philosophy of SOA, but also trained in its practical details and how it will be implemented.

Finally, train your staff on the specifics of building and deploying SOA. This granular level of training needs to address the specific technologies to support the company's move to SOA. This will require the greatest amount of training.

Keep in mind that the initial training may not be a resounding success. The concepts of SOA are foreign to many IT professionals, who are probably more familiar with other architectural models.

Comprehending a new paradigm is often difficult. Futurist Joel Barker refers to this syndrome as the "paradigm effect." He explains that most people have certain boundaries that govern their perceptions of the world. When a new theory tests those boundaries, people may reject it because it doesn't fit in nicely with what they believe.

Conquering the paradigm effect requires commitment from management and a thorough training campaign. Don't be discouraged. It is possible to retrain staff; I've seen it happen. Stick with it, and you will see results.

3 ESTABLISH AN ENTERPRISE GOVERNING COMMITTEE

The ultimate goal of SOA is to develop a flexible architecture that is capable of integrating disparate, heterogeneous applications through a common interface. This is accomplished through designing and developing application-independent services that can be accessed and shared across the organization.

To ensure an enterprise focus when decoupling applications and developing reusable services, a governance committee is absolutely essential. Some literature and practitioners refer to this committee as an integration competency center (ICC).

There are some key components you may want to consider when establishing your ICC. When you are identifying participants, ensure that you have strong representation from across the organization — both business and IT.

Remember, the goal is to reduce silos and increase enterprise reuse. This can be accomplished only through adequate enterprise representation — a system of "checks and balances."

Assign your best and brightest associates to the committee, and ensure that they are well-trained and highly knowledgeable SOA champions. These will most likely be people who have little time to spare, so this can't be an "in addition to all your other work" task. Senior management must understand the importance of participation by the members on this team and be willing to redistribute workloads in order to make this a priority.

4 THINK BIG, BUT START SMALL

Last and most important, don't be overzealous in implementing SOA at first. It may take time.

History has demonstrated that the big-bang approach in IT rarely works. Small, incremental changes have a greater opportunity for success because they are more manageable. Fortunately, the incremental approach works well within the context of SOA because the architecture allows the company to implement one service at a time.

To start, pick a relatively minor function that is low risk yet important to the company. Retrieving and consolidating customer information from multiple systems may be a good candidate, for example. Develop a service around that functionality that is designed to support the whole organization (for example, more than one application).

Next, begin to decouple that functionality from the various systems that rely on a point-to-point interface and redirect them to the new shared service.

Starting small will enable your organization to test the waters and refine the process if necessary before you dive into major services, such as redirecting your financial applications to use one common interface. It will also provide a good barometer for gauging the readiness of your company to embrace SOA and act on it as the new architectural model.

There are many factors to consider as you migrate to a service-oriented architecture. If you would like additional information on SOA, please contact me, and I'll be happy to send you a white paper that I have written on this subject. ◗

Karacsony has more than 12 years of consulting and professional experience in IT. He is currently working at Toyota Motor Sales Inc. as a senior data analyst. Contact him at Ken.Karacsony@verizon.net.

WHY BOTHER?

VERY FEW IT SHOPS ARE MONOLITHIC. Companies employ a wide variety of technologies and systems to support complex business functions. For example, a company may use PeopleSoft to run the financials, employ packaged applications to support forecasting and planning, build custom sales and procurement applications, and support a few legacy systems to manage customer information.

With so many systems in use, integration is a monumental challenge. Ask 10 IT executives to name the biggest problem they face, and nine will most likely put integration at the top of the list. Integrating heterogeneous systems that weren't designed to work together is very expensive and difficult.

The purpose of a service-oriented architecture is to solve the integration conundrum. This is accomplished by designing an architecture that is capable of integrating disparate, heterogeneous applications with minimum redundancy and maximum flexibility. A fully developed and deployed SOA will lower IT costs and provide greater business value through flexibility, reuse and enterprise integration.

– KEN KARACSONY

_THE INVASION

_DAY 11: These commoditized clones have taken over. Haven't been outside in days. Living off instant coffee and a tin of breath mints. :-(

_DAY 12: They're breeding. Multiplying. Multiple apps. Multiple databases. They must have a queen.

_Help...me....

HOW to Talk BUSINESS

Every IT project is a business project. Here's how to make that clear.

BY STEVE ULFELDER

“THERE ARE NO IT PROJECTS” at Kaiser Permanente, says CIO Cliff Dodd. Instead, he says, “some business projects have a significant IT component. And like any other project, they have to be rationalized with a business case; every [regional] CFO that could be impacted has to sign off.”

“No IT projects” is something of a motto at the Oakland, Calif.-based health care giant. It is one of five principles instituted by Dodd four years ago, continually stressed in PowerPoint presentations and even on placards on the walls. And it's becoming a guiding philosophy in many other companies as well. One result of this is a demand for rigorous cost-justification of projects that used to be dismissed because they were considered too technical to explain or were assumed to be just a cost of doing business.

That puts the onus on CIOs to cost-justify initiatives whose returns may be difficult to quantify to nontechnical executives. “This is where a lot of IT departments have a problem,” says Jim Carty, president of IS Value Corp., a consulting firm in Yardley, Pa. “They see a need but cannot get funding approved.” But it can be done. Here are three successful approaches.

MONEY TALKS

While it may be obvious to an IT group that an upgrade is the smart move, business executives don't necessarily share that opinion — often for good reason. “When I was working with Amex a few years ago, they were running certain parts of their operation on Intel 8088s,” Carty says. “The [PCs] could still do what they needed them to do, so there was no reason to replace them.”

If you believe that a piece of hardware, a network switch or a software package needs to be replaced, be prepared to prove it and remember that dollars talk. For example, when Hatfield Quality Meats Inc. sought funding last year to update its Demantra Inc. demand-planning software, CIO Bob Hardner studied the newer release's features and translated them into persuasive business terms. The proposed upgrade would cost only $20,000, but “we had to uncover net gains,” Hardner says. The answer was clear: While the old version allowed forecasting only in weekly “buckets,” the newer release could provide demand forecasts on a daily basis, he says.

Before proposing the upgrade to the chief financial officer, Hardner looked at the past year's deliveries and counted the times the lack of daily forecasts had cost the Hatfield, Pa.-based distributor an order. The tally easily justified the upgrade.

RIDING COATTAILS

If the dollar return on a project remains elusive, another way to make your case is to find legitimate links to an initiative with high returns on investment.

“You say, ‘To get the CRM done, we're going to need the network switches,’ ” says Jon Piot, president of consultancy Technisource Inc. in Little Rock, Ark. “You're just adding more cost to the project. It's like making plumbing changes in your house when you've got it all torn apart anyway for renovations.”

This approach, which nicely complements the “no IT projects” mantra, is the one used by Harrah's Entertainment Inc. In 2004, the Las Vegas-based company, which already operated casino hotels in 13 states, purchased Caesars Entertainment Inc. for $9.4 billion. Harrah's is just now wrapping up the ambitious undertaking of folding Caesars' customer-loyalty operation into its own.

“As we've added Caesars, we've had to significantly scale that system,” says David Richter, Harrah's vice president of infrastructure. “We folded in literally tens of millions of new customers.” That entailed significant IT investment in nearly every area of infrastructure, including redundancy. “Previously, we were on a fail-over model,” Richter says. “We shifted to a high-availability model with two data centers.”

“In a major project like that, the cost of infrastructure — platforms, networks and so on — is included in the overall cost estimates,” says Harrah's CIO Heath Daughtrey. “And because that project already has ROI projections, the [infrastructure cost] is already in terms the COO and CFO understand.”

RISK AND BUSINESS

To truly talk business, CIOs need to talk risk. But some CFOs say risk is a project element that's little understood and poorly communicated by most IT executives.

“Risk is always part of the return picture, and some tech guys don't see that, which can be frustrating,” says Robert Simmons, CFO at ETrade Financial Corp. in New York. “As a CFO, you need [to know] chapter and verse about the reward and the risk.”

While the naive might think highlighting risk will destroy the case for a project, the type and degree of risk can actually be a selling point. “If we're investing in a technology we understand perfectly, I'm willing to live with a lower predicted return than if it's a new, untested technology,” Simmons says.

> “If we're investing in a technology we understand perfectly, I'm willing to live with a lower predicted return than if it's new, untested technology.
>
> ROBERT SIMMONS, CFO, ETRADE FINANCIAL CORP.

He is quick to note that ETrade's IT group understands risk. As an example, Simmons points to the company's move to open-source software, which began in 2002, early in the open-source movement.

ETrade CIO Greg Framke led the initiative after the company's board determined that better scalability was crucial if the company was to grow out of the dot-com malaise. “Greg came back with a Linux proposal and told us here was a chance to break the vendor stranglehold,” Simmons says.

The risk was undeniable: ETrade would be very early with a broad-based Linux initiative. But Framke hit a home run by convincing the board that one component that would not be risked was the customer experience. Open-source might turn out to be a costly technological dead end, he says, but any pain would come in the form of worker hours and money, not angry customers.

That convinced board members that the scalability advantages of open-source outweighed the risks. Years later, it's clear that the gamble paid off. “We made two acquisitions in 2005, and they were enabled in no small part by open-source,” says Simmons.

The pressure is on for CIOs to translate proposed initiatives into business terms. Moreover, the discipline required to do so can help them better understand and prioritize projects themselves. ◗

Ulfelder is a freelance writer in Southboro, Mass. Contact him at steve@ulfelder.com.

Higher Rates, Tougher Sell

Today's rising interest rates affect more than just home mortgages; they also make IT initiatives harder to sell to the chief financial officer. At ETrade, “a project that cleared the ROI hurdle two years ago may not today,” says CFO Robert Simmons. Here's why:

Any proposed initiative carries a predicted dollar benefit. Take a theoretical IT project that costs $1 million and is expected to help the company earn an additional $100,000 a year for 20 years. If the interest rate is zero, the value of that project right now is $100,000 x 20 - $1 million, or $1 million, a no-brainer 100% ROI.

For the five years leading up to 2005, interest rates, although not zero, were so low as to render capital darn near free in the minds of CFOs. That has changed: The Federal Reserve bumped up rates steadily in 2005 and has raised them again this year, and analysts see no end in sight. The result: “As rates rise, you have to discount those future cash flows back to today, and they're simply worth less,” Simmons says.

So expect a higher bar for coming projects. The good news is that if you demonstrate that you understand the effect of interest rates on IT initiatives, you'll gain credibility with business executives. And if you can show a quick ROI, all the better.

– STEVE ULFELDER

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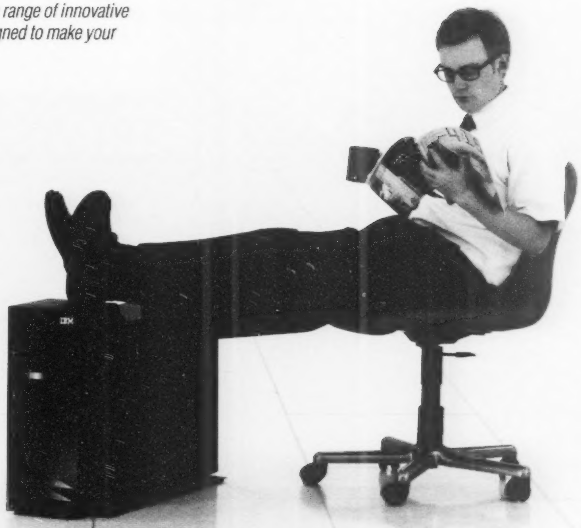

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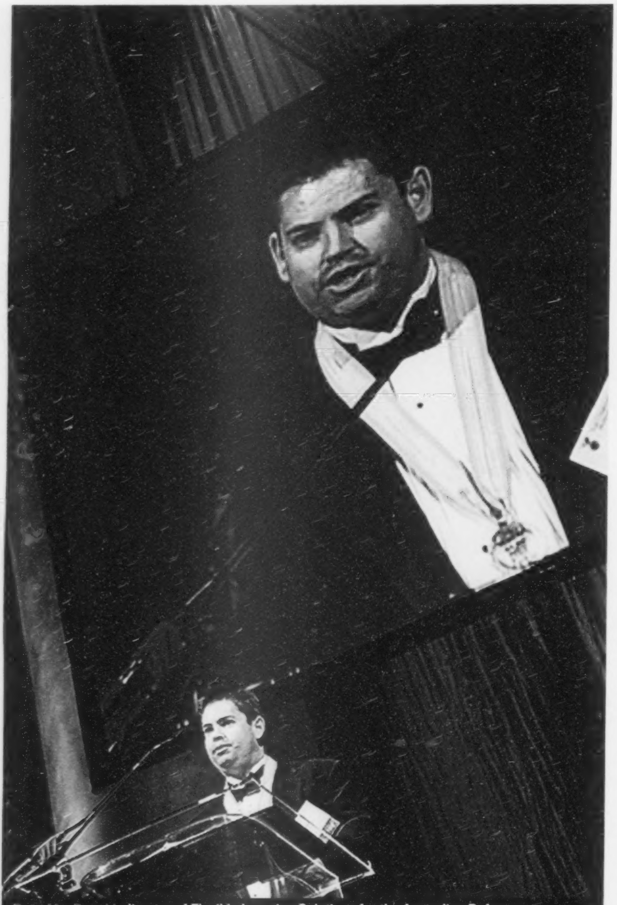
MISSION: Education

The Australian Defence Organisation deploys first-class online training to troops.

BY MARY K. PRATT



Brett MacDonald, director of Flexible Learning Solutions for the Australian Defence Organisation, accepts a *Computerworld* Honors award in the Education & Academia category.

ASA MATHAT

THE Australian Defence Organisation believes that education advances its mission.

And, like other executives, Australian defense officials knew they had to find the most effective, cohesive way to deliver courses to the ADO's nearly 100,000 military and civilian personnel.

They wanted a single approach for the entire organization, one that would standardize content and control costs at the same time, says Brett MacDonald, director of Flexible Learning Solutions at the ADO.

MacDonald and his team scored big with the 2003 launch of the Defence Online Campus, a learning management system that attained those objectives. The initiative's success earned it a nod from the *Computerworld* Honors Program in the Education & Academia category for 2005.

"We can't say enough about it. We love it," says Wendy Horder, an Air Force wing commander who, as director of the Australian Defence Force Peacekeeping Center, is using the Web-based system to educate troops.

Cohesive Approach

The Australian military had e-learning capabilities prior to the ADO-wide integrated system, but not all divisions had equal capabilities, MacDonald says. So as officials spent 2002 developing a business case, they were clear in their desire for a system that standardized educational policies and procedures — which would allow for centralized IT and educational management.

"People were saying, 'Let's look at this in a strategic way: How is it going to improve how we deliver education and training? Let's go from that aspect.' So we took a step back and looked at what we needed to do," MacDonald says.

AT A GLANCE

- The Australian Defence Organisation has nearly 100,000 military and civilian personnel. Its Directorate of Flexible Learning Solutions (DFLS) developed the Defence Online Campus to give the organization's training and education program more flexibility, efficiency and cost effectiveness. **The learning management system went live on Nov. 2, 2003.**

- At the height of the deployment, **the ADO's internal team had seven employees working with eight contractors.**

- **The cost to implement the system was between $4 million and $5 million (Australian).** The DFLS doesn't measure all returns, but military officials say they have seen savings from reduced travel costs as well as reduced time away from jobs to attend classes. They've also seen an increase in the number of people enrolled in courses, because the online option allows personnel easier access to training. In addition, the online learning system serves as a recruitment and retention tool for the ADO, says Brett MacDonald, director of Flexible Learning Solutions.

Team leaders then assembled all major stakeholders early in the process to better understand their requirements. That exercise produced a list with more than 700 desired functionalities from the army, navy, air force and various civilian groups.

The team hired Deloitte Consulting, which handled all aspects of the project, including the selection of software providers.

The Web-based Defence Online Campus is an integrated learning management system, learning content management system and basic content-creation tool. The software is supported on a centralized IT server and operates within the Defence Restricted Network, a WAN available to nearly all ADO personnel.

The learning management software comes from Thinq Learning Solutions, a Baltimore-based company acquired by Saba Software Inc. in 2005. An application called OutStart Evolution from Boston-based OutStart Inc. provides both the learning content management and content-creation functionality.

The team chose these vendors because they met more of those 700 requirements than the other finalists, and the software companies had experience working with the U.S. military, says Dane Buchardt, deputy director of Australia's Directorate of Flexible Learning Solutions.

Today, the Defence Online Campus offers about 150 e-learning courses. In fact, it's one of the largest nonacademic e-learning system implementations in Australia.

The ADO's approach is to follow some of the best practices seen in the private sector, particularly among companies in the U.S., where e-learning has a stronger foothold than it does in other parts of the world, says Claire Schooley, an analyst at Forrester Research Inc. in Cambridge, Mass.

"This is a growing trend worldwide, as learning becomes something that all organizations have to be active in for [competitive] reasons," Schooley adds.

The ADO is already seeing cost savings and other benefits. Horder, for instance, now offers an eight-hour United Nations course to personnel via the online system. About 500 people have taken the online course since last July. The cost? Only $100,000, the price of the contract to develop the e-learning content, Horder says. It would have cost $750,000 to train that many people in face-to-face sessions.

The system's benefits aren't just financial. William Monfries, a colonel of education and training systems at the Army Headquarters Training Command, says trainers and students have "much more varied access and therefore flexibility." He says that if soldiers can access course work on their own time, with minimal disruption to their jobs, "that's an immediate return."

Given these successes and endorsements, MacDonald says the objective today is to grow the system. He wants to see more interactive programming and more functionality in addition to more training offered in synchronous ways, such as in virtual classrooms. ■

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OBJECTIVE: ALIGNMENT

When the Australian Defence Organisation decided to expand its e-learning capabilities, it put the project under the Directorate of Flexible Learning Solutions (DFLS), located at Northbourne House, Canberra.

The move circumvents the usual practice that puts IT in charge of all technology-related deployments. But in this case, it ensured alignment of key learning objectives and the technology meant to support them, says Brett MacDonald, director of Flexible Learning Solutions.

"I've seen that a lot of these types of implementations haven't been as educationally sound or effective if they're run out of the IT division, because they're more concerned about making sure the systems work," says MacDonald. "But our key focus was making sure the IT meets the functionality requirements."

That doesn't mean that tech skills were undervalued or that IT was shut out of the process. MacDonald says he has been involved in e-learning for nearly 10 years. Dane Buchardt, deputy director of the DFLS and project manager during the implementation, has a bachelor's degree in adult education and a master's in computer science.

And the IT department was one of the major stakeholders in the project. MacDonald says his group and the IT department had ongoing meetings to make sure neither the business needs nor the technology requirements got shortchanged.

This cooperation continues post-deployment. The DFLS help desk, for example, is linked to the IT help desk, so workers calling with questions are guaranteed to get a response from the person with the right expertise, MacDonald says.

– MARY K. PRATT

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1. **Getting to Know ArcGIS Desktop** by Tim Ormsby, et al. (ESRI Press, 2004)
2. **Design Patterns: Elements of Reusable Object-Oriented Software** by Erich Gamma, et al. (Addison-Wesley Professional, 1995)
3. **HTML for the World Wide Web With XHTML and CSS: Visual QuickStart Guide** by Elizabeth Castro (Peachpit Press, 2003)
4. **Microsoft Office Project 2003 Step by Step** by Carl Chatfield and Timothy Johnson (Microsoft Press, 2003)
5. **MCSE Self-Paced Training Kit (Exams 70-290, 70-291, 70-293, 70-294)** by Dan Holme, et al. (Microsoft Press, 2004)

Getting to Know ArcGIS

Matt Sullivan

Q&A

TITLE: **Head of global compliance practice**

COMPANY: **Kanbay International Inc.**

If to you, globalization means driving a Japanese car and worrying that your job could be taken by someone on the other side of the world, you might like to meet Matthew Sullivan, an American IT consultant who has moved to Pune, India. He recently spoke with *Computerworld*'s Jamie Eckle.

Why did you want to move to India? How have you found the experience, and how long do you envision staying? I wanted a position that would take advantage of my skills as a technologist, a management consultant and an attorney, in an environment different than that of the U.S. My employer gave me the opportunity to move to Pune to apply my skill set as a global compliance expert out of Kanbay's offices in India.

The move to India has been very rewarding. As the leader of Kanbay's risk management and regulatory compliance practice, I help financial institutions meet their compliance requirements with regard to anti-money-laundering, Sarbanes-Oxley, Basel II and data privacy. Specifically, I get to see how these standards and regulations vary among the countries in which our clients – global financial institutions – operate. I would not have been exposed to many of these issues if I were not working outside of the U.S., and I am planning to stay in India for at least another year.

What special qualifications made you a good candidate to pursue your career in India? In general, openness to experiencing a different culture, including its food, religion, social life and living arrangements, is important. My previous experience of working in foreign countries, including Korea and Germany, has been useful to adapting to my new living environment.

Having been to India on business trips before starting a long-term assignment has been an advantage. In addition to cultural openness, a desire to learn and understand new principles and methods, and the ability to provide knowledge on a particular subject, has been very beneficial.

Now that you've been in India for a few months, how do you think you will apply what you gain there to your career? Living and working in India is a tremendous learning experience. Moving forward, the knowledge gained will be beneficial for supporting global clients' needs. My understanding of the Indian culture will be useful both in interacting with my Indian colleagues and clients and understanding which things are likely to be similar and which are likely to vary among the various cultures of the world.

Page compiled by Jamie Eckle.

The Cost of Luring Talent

"SIMPLY PUT, there's no way for businesses to avoid paying higher compensation."

Those are the words of Bill Gilbert, managing director at Futurestep, in a column he wrote for *Computerworld.com*'s Careers Knowledge Center ["Opportunities and Risks of the IT Hiring Boom," Feb. 13]. What makes him say that?

Something called the Futurestep Compensation Index, which the Korn/Ferry International subsidiary uses to measure the difference between what currently employed (passive) candidates earn and what it would take to lure them to another job. According to the most recent index, based on a survey of 5,700 candidates across virtually all industries, in 2005 the premium stood at 11.2%, compared with 9.7% in 2004. The data also has plenty of repercussions for individuals looking to change jobs or expand their careers.

Says Gilbert, "The higher the number goes, the more leverage individuals have in choosing jobs and employers. What's more, employers recognize the situation and find that they have no choice but to pay a premium to keep talent. The situation is exactly the opposite during an economic lull, when employers shy away from offering raises and employees are more willing to shop around. Employee loyalty takes a hit as layoffs swell, pay increases ebb, and job security wanes."

He goes on to explain that the current pay premium is particularly high for certain positions and in some regions. For example, a 3.7% premium was typical for an applications programmer in the West in 2004, but only a year later, the number had spiked to 17.5%. In the South, a company could attract a systems integrator for a 3.5% premium in 2004, but the number had risen to 12.4% a year later. Although the numbers vary based on the job and geography, an upward trend is clearly in place.

More Evidence of a Talent Crunch

4.7% Overall U.S. unemployment in January

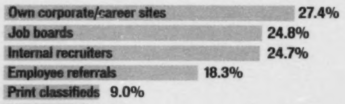
3.5% Unemployment rate for those with "some" college

2.1% Unemployment figure for those with a bachelor's degree

SOURCE: U.S. BUREAU OF LABOR STATISTICS

IDC notes that the figures above show that knowledge workers are at a premium right now. In an IDC survey of 70 recruitment and human resources professionals, IT was cited as the area with the greatest labor shortages, followed by finance. The same survey looked at where companies are finding their new hires:

Percentage of new full-time hires found via each of the following methods/sources annually.



SOURCE: IDC'S TALENT PULSE SURVEY, NOVEMBER 2005

Health Care Standards on the Table

Physician CIO heads interoperability panel

IN ADDITION to being CIO for CareGroup Healthcare System, Harvard Medical School and Harvard Clinical Research Institute Inc., **John Halamka** is chairman of the New England Health Electronic Data Interchange Network — when he's not working as an emergency room physician at Beth Israel Deaconess Medical Center in Boston.

He was also recently named chairman of the Health Information Technology and Standards Panel (HITSP), a partnership between the public and private sectors established by the U.S. Department of Health and Human Services. It's working to develop a set of standards to enable interoperability among health care software applications. *Computerworld*'s Thomas Hoffman spoke to Halamka about his role and the organization's goals.

What's the genesis of this effort? Think of the barriers that exist with rolling out electronic health records. There aren't any standards for shipping them from place to place. When I was in Japan a few weeks ago, I could use my ATM card at any bank. Yet here in Boston, I can't get my medication list sent to a hospital across the street.

HITSP is charged with taking ANSI, ISO, IEEE and HL7 [a protocol for hospital data transactions] and harmonizing all of these standards. One hundred fifty organizations [including General Electric, Siemens Medical Solutions and the U.S. Department of Veterans Affairs] are getting together monthly with an aggressive plan to have a set of standards in place for an implementation guide by September for health care organizations to share medical records and results securely.

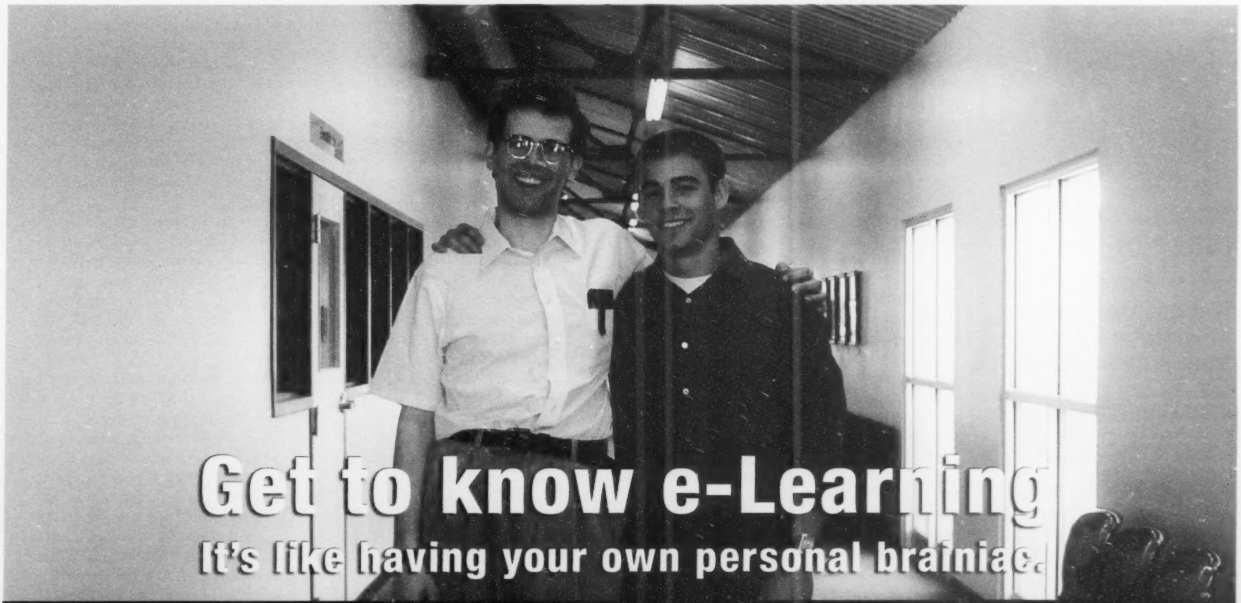
How did you get involved? [The American National Standards Institute] has the contract with HHS to serve as the secretariat for this. They wanted a chair that was knowledgeable about health care IT but was neutral and didn't come from one of the standards organizations. Because I'm a physician and a CIO, and I'm also the CEO of a regional health care organization, I touch all of these various components of this health care/IT problem.

What are the biggest challenges facing CIOs in health care these days? There's such an overwhelming interest in electronic health record deployment. The challenge for any hospital or health clinic is that you not only have your own doctors but other referring doctors and partners. Can we apply an application service provider type of model for electronic health records securely? This is a huge change-management issue that CIOs are facing.

Other industries spend 12% of their operating budget on IT, and in health care, it's only 2% to 3%.

Historically, physicians have been averse to adopting and using new technologies. Has this changed much over the past few years? Pay-for-performance incentives are changing it so that insurance companies will reimburse doctors for using systems and systems support. Physicians can get 3% to 4% of their revenues through these reimbursements — or higher.

With all of your titles, do you have any free time? I sleep three hours a night, and I have my BlackBerry attached to me at all times. On Saturdays, I'm ice climbing and rock climbing, and on Sundays, I'm with my daughter and my wife, so my work/life schedule is balanced. ▶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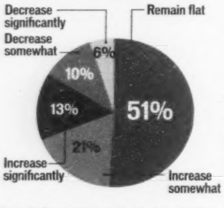
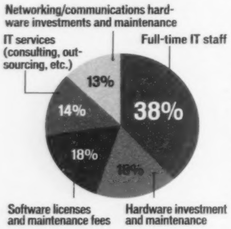
QUICK HITS

How will the ratio of new investment to overall IT spending change compared with 2005?



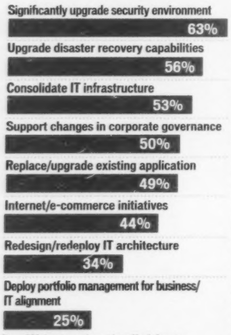
Base: 452 IT executives at large North American companies (Percentages don't equal 100 because of rounding.)

How does your IT budget break down among the following categories?



Base: 368 IT executives at large North American companies (Percentages don't equal 100 because of rounding.)

Which of the following are likely to be one of your IT organization's major priorities for 2006?



Base: 868 decision-makers at large North American companies

SOURCE: FORRESTER RESEARCH INC. FEB. 2006; DATA COLLECTED OCTOBER/NOVEMBER 2005.

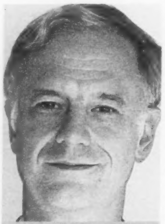
BART PERKINS

Outsourcing: Out of Sight, Out of Mind?

IS YOUR OUTSOURCER out of control? Mine is, and the failure is my fault. Guilty, guilty, guilty!

Last year, my wife and I outsourced our yard care to a local gardener. We agreed that he would mow the lawn, kill weeds, sweep walkways and rake leaves. We agreed on pricing and felt confident that our yard would be well tended.

Unfortunately, the gardener outsourced most of the work to a subcontractor, who in turn outsourced cutting the grass to various independent mowers. Apparently, some of the yard care information didn't get communicated to the subcontractor. The details certainly never got to the mowers, who were unaware of the property lines and neglected to mow part of the yard.



BART PERKINS is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. He was previously CIO at Tricon Global Restaurants Inc. and Dole Food Co. Contact him at **BartPerkins@LeveragePartners.com**.

We had a dilemma: If we wanted something done differently, who should we contact? No approach worked well. Agreements with the gardener rarely made it intact to the mower. It often took several weeks to speak to the mower directly, since he followed an erratic schedule that rarely overlapped with ours. Moreover, he took direction only from the middleman, whom we never met.

By summer, the grass was high, dandelions were rampant, and the sidewalks remained unswept. We later received an unexpected surcharge for leaf-raking.

Does this outsourcing nightmare sound familiar? Today's IT organizations buy more products and services than they build. Everyone agrees that outsourcing is important, but do we manage it well? Here are some ways to avoid similar problems:

Create a clear contract. You may not want to prohibit an outsourcer from using outside resources, but your contract should clearly describe deliverables, schedules, service levels and cost. Your outsourcer can easily pass this information (and corresponding accountability) to any subcontractors involved. Realize that anything agreed to with a handshake may be overlooked by subsequent — and often invisible — subcontractor agreements.

Retain sufficient management control. Some executives believe they can outsource a major chunk of IT and get rid of all the associated staff. Experience shows that an additional 10% to 20% of the contract's value (less for infrastructure, more for applications development and maintenance) is required to monitor and manage the outsourcer. This is not a background task.

Meet regularly with your outsourcer. Successful outsourcing efforts require periodic meetings to review progress, discuss problems and plan corrective actions.

Also, use these meetings to celebrate successes and communicate what is working well. We didn't, and we paid the price.

Define specific metrics. Establish clear outsourcing goals, translate them into effective metrics, and incorporate them into the contract. Review them regularly; unmonitored metrics are useless.

Build multilevel relationships. Your outsourcer's top management has decision-making authority but limited (and possibly incorrect) day-to-day information. People in the trenches have lots of pertinent information but lack the power to authorize changes. Middle management has varying levels of data and authority. Build working relationships with your outsourcer at several levels for an optimal outcome. Our gardener was too far removed from the work, the mowers had little autonomy, and the middleman was invisible.

Define clear roles. Each person involved with the outsourcer needs specific responsibilities. Who can authorize changes? Who is responsible for communications? My wife and I juggled responsibilities and painfully relearned that without clear roles, a lot of information can get lost or confused. Take measures to avoid conflicting communications across departmental lines.

Emotionally, outsourcing often equals "out of sight, out of mind." Although yard care is a trivial example, we mismanaged our gardener in the same ways many customers mismanage their outsourcers: fuzzy requirements, poor communication and insufficient management attention.

It's easy to overlook outsourcer management. After all, gardening isn't rocket science, and there are more important issues. (Organizations rarely outsource the critical stuff.) Outsourcing frees your time for more pressing and complex matters. Until you begin to notice the weeds.

Leverage your outsourcing investment by allotting the time and resources necessary to manage your outsourcer effectively. Have clear requirements, establish effective metrics, monitor progress regularly, and communicate effectively.

Many executives feel they can't afford these efforts, and they cut corners. But anything that warrants outsourcing also warrants management attention. Insufficient outsourcer management will result in a backyard full of weeds.

By the way, our new gardener starts this spring. And we vow to do better this time.

How's the backyard in your IT department? Got weeds? ▶

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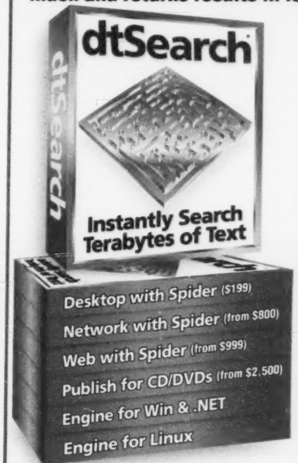
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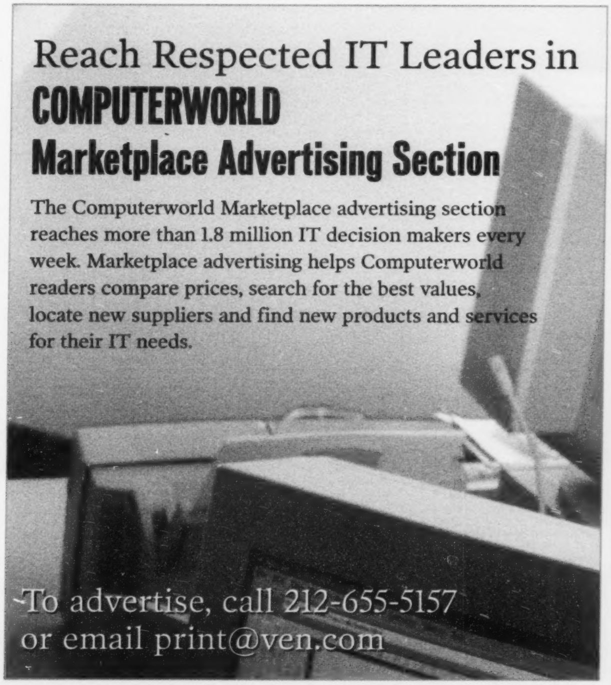

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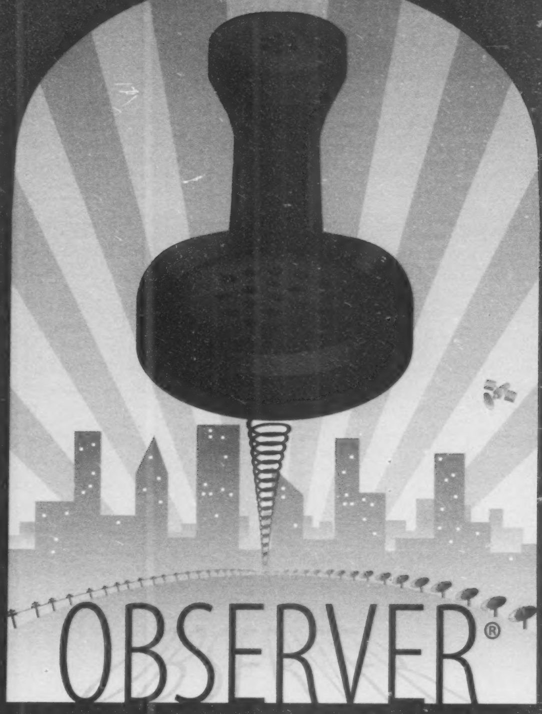

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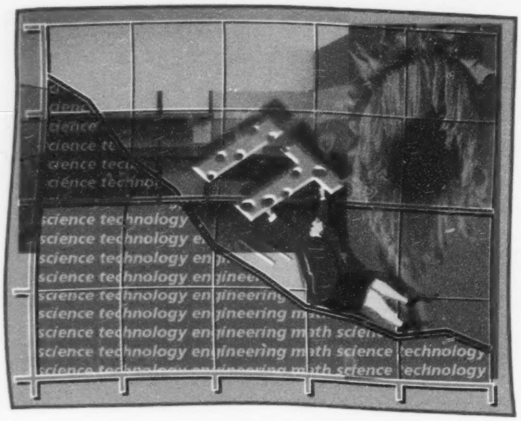
Advertising Supplement

IT Careers: ITAA Reports Decline for Women

Every national indicator points to a tightening labor market. Companies are hiring selectively, and competition for the most talented has brought on the rebirth of hiring premiums and incentives. Innovative leaders are finding ways to keep more experienced workers on the team past traditional retirement.

To add to the problems of dealing with a surge in staffing needs, the number of available people is shrinking – despite the continuous call for more science, technology, engineering and math workers. Marjorie Bynum of Information Technology Association of America reports to ITAA members that 50% of science, technology, engineering and math – known as STEM – degree holders are older than 40, and that between 1985 and 2000 the number of STEM BS degrees awarded dropped 18.6%.


science technology engineering math science technology

Among the most dramatic findings is the situation with women. Enrollment in STEM programs is on the decline, and the percentage of women in the information technology workforce has dropped from 41% in 1996 to 32.4% in 2004. "If the administrative categories (data entry and computer operator) were removed from the analysis, the percentage of women is significantly lower," Bynum says. She points to trends in K-12 education that indicate girls still aren't attracted to what are perceived as "male" subjects – math, science, technology. "We must change inaccurate images," she says.

Google is among the companies working to portray this accurate image. Stacy Sullivan, Google's director of human resources, says many women avoid technology careers because they are perceived as being isolating – the stereotype of a programmer in a cube. Google invites young women into its facilities so they can observe first-hand. The company is taking its operations outside the California kingdom, citing the need to tap talent in New York City, Phoenix and other locales. She works with hiring leaders to reinforce that software and application development require a team approach.

Google's goals to attract more women and people of more diverse backgrounds links to a corporate business edict. No new product can be rolled out unless it is culturally friendly to its users – from how users interact with the product to how they communicate with Google.

ITAA endorses these types of actions. After meeting with industry leaders last fall, the group is planning another meeting for this spring to define actions required to reverse the downward trends for women, minorities and the STEM workforce in general. The organization's leaders have set the goal of doubling the number of STEM graduates from 430,000 now to 860,000 in a decade. Bynum says mentoring, providing an accurate portrayal of the careers, and investment in the research and development base is required to make it possible.

For more information about IT Careers advertising, please call: 800.762.2977

Produced by Carole R. Hedden

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Manage customer relationships and requirements for tech product line.

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Mail resume
Attn: Cora Haussecker, Manager,
Global Mobility Center Americas,
SAP Labs, 3410 Hillview Ave.
Palo Alto, CA 94304.
Reference Job ID#. EOE.

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Applications (National Placement out of Pittsburgh, PA, Multiple Positions Available) Three years experience as a Software Engineer who has a strong background in development, analysis, testing as a QA Analyst. Bachelors equivalent in Computer Science. Experience with COBOL/CICS, CA-IDMS ADSO, Mercury Tools, Rational Suite. Able to relocate. 9-5, 40 hrs/wk. Ref# QA100–PG and send resume to Datavibes, Inc. 2121 Noblestown Rd, Ste 106, Pittsburgh, PA 15205 or to hr@datavibes.com

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M-I LLC (aka M-I SWACO) in Houston, TX seeks qualified Sr. Business Systems Analyst to examine and evaluate worldwide reporting requirements for all applications and business units across the organizations.Submit Resume to Jelena Jones, HR Representative, 5950 North Course Dr., Houston, TX 77072. Put Job Code M-I1 on resume.

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Writing test cases, modifying test plans. and project planning. Perform regression, functional and UAT testing. Review the business specifications and technical specifications. Log defects into the Test Director. Manage the test cases and test scripts in Test Director. Writing winrunner scripts. Writing SQL for data validation. Must know Winrunner, Manual Testing, Test Director, Loadrunner, Windows NT/XP/2000, MS Office, Oracle. Edu: MBA or Masters in CS. 2 yrs exp required. 40 hrs/wk, M-F. Attn: HR, XAXIS Solutions, 141 New Road, Suite 1E, Parsippany, NJ 07054

Sr. E-Learning System Application Administrator: Shall be responsible for supervising design, development and implementation of various applications for the school's I.T. system, including, but not limited to, database, web presence, e-learning, student/parent access to web and network system. Shall use SQL Server, Oracle, ASP, ADO, VB, Com, HTML, IIS, Java Script, Mathematica and Web Mathematica. Must have a Masters (foreign equiv. acceptable) in Computer Science with 3 yrs of I.T. exp. 2 yrs. of exp. in all above skills. Location: Lawrenceville, NJ. Send resume. Attn. Timothy Cottrell, CIO, The Lawrenceville School, 2500 Main Street, Lawrenceville, NJ 08648.

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(National Placement mult positions) 3yrs exp with Mainframe application development, QA & implementation. BS or equiv MIS, Computers/Eng. Must have Analysis and Testing exp Mainframe systems, COBOL, CICS, JCL. Working with FDR & TSYS billing systems. 21 CFR 11 desired. relocate. 9-5, 40 hwk. Ref CMF100 resume to prab@astacrs.com.

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e-learning Services Oversees division selling IT e-learning services to European business clients. Must have at least 2 years experience in job offered. Send resume to: CBT Direct, LLC, 25400 US 19 N, Suite 285, Clearwater, FL 33763, Attn. K. Cardinale.

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System Engineer, Ossining, NY, Duties: Analyze, study and maintain existing application programs, research, plan, design, develop computer information system and modify, decode, rewrites, test and troubleshoot application programs to increase efficiency as per specification and end-user requirements using ASP, ASP.NET, VB, VB.NET and stored procedure, triggers, TSQL SERVER 7/2000. 2 Yr. exp. and Bachelors degree rqd. 40hrs/wk, 9a-5p. Send resumes in duplicate to: HR, Testwell Laboratories, Inc. 47 Hudson Street, Ossining, NY 10562.

Synerzy Software Solutions Inc. needs Software Engineer with experience of migrating applications from Windows 2000 to Windows 2003. Required skills: Extensive knowledge of IIS 6 configuration and differences, in depth knowledge of Windows 2003, strong knowledge of SiteMinder, ASP .Net, SQL Server 2005, IBM Web Sphere MQ, Visual Studio 2005, Visual Studio 6. Desired skills: Experience oN Virtual Servers, IIS Administration, Java, VB Script. Send resume & salary req. to HR Manager, Synerzy Software Solutions Inc, 1 Austin Ave, 2nd Floor, Iselin, NJ 08830

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AT&T-BellSouth

as voice over IP, and potential competition from companies such as Vonage Holdings Corp. and Skype Technologies SA, could make it harder for AT&T to take advantage of its expanded market position, according to Fisher and other IT managers.

The planned acquisition could limit traditional telecommunications options for corporate users, said Rebecca Blalock, CIO at Southern Co., an electric utility in Atlanta. But AT&T and other telecommunications carriers "are living in a world where they aren't the only technology out there," she said. "That's why I'm not as concerned as I might be if there weren't other technologies available."

Southern is "moving fast" to start up some VoIP pilot projects, Blalock said. But she noted that the utility is a big customer of both AT&T and BellSouth and has received solid service from them in the past.

Blalock said she was heartened by the fact that her AT&T account representative sent a message about the merger deal to her BlackBerry device early last Monday and followed up with another message assuring her that AT&T would continue a new disaster-recovery initiative between BellSouth and the utility.

Consolidation Model

"It's certainly going to be easier for me to deal with one entity than it is to deal with two," Blalock said — a sentiment that was echoed by other IT executives who are looking to combine various services under a single vendor.

Dan Buchanan, manager of IT at Parker Hannifin Corp.'s O-Seal division in San Diego, said the company as a whole has been moving to consolidate its telecommunications business with AT&T.

Calling Cards

The acquisition of BellSouth would give AT&T the following:

- **Ownership of local and long-distance phone services in nine Southeastern states** – Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee.
- **Full control of Cingular Wireless,** the top wireless carrier in the U.S. Cingular currently is split 60-40 between AT&T and BellSouth.
- **BellSouth Telecommunications Inc.,** a subsidiary that offers wireline communications services such as network access and Internet service.
- **BellSouth Business,** a marketing unit that caters to large corporate users and offers them both voice and data networking services.

In addition to giving Parker Hannifin a single point of contact for its telecommunications needs, the strategy is designed to help the company negotiate better pricing by grouping together all of its telecommunications spending, Buchanan said.

"We're dealing with such a large portfolio of services that we can't easily migrate to another supplier, and they know that [at AT&T]," he said. "But they still come to the table and negotiate with us based on the total dollar spend."

Colleen Boothby, an attorney at Levine, Blaszak, Block & Boothby LLP in Washington, said she's concerned that the enterprise telecommunications market is turning into a noncompetitive duopoly between AT&T and Verizon Communications Inc.

Boothby, who represents large companies in negotiations on networking contracts, said via e-mail that she had hoped BellSouth might buy Sprint Nextel Corp. and become "the third leg on the competitive stool." AT&T's planned takeover of BellSouth "makes a problem market much worse," she said. "Duopolies are just breeding grounds for parallel pricing and sluggish performance."

But David Rohde, a consultant at TechCaliber Consulting LLC in Washington, said the planned merger shouldn't raise big concerns for corporate telecommunications managers. As long as Sprint Nextel remains in the enterprise land-line business, corporate users "still have a good, competitive market" to choose from, Rohde said.

Don Gibson, vice president of e-commerce and infrastructure at FedEx Kinko's Office and Print Services Inc. in Dallas, said that he worked for AT&T Corp. in the 1980s, "and it's like it's coming full circle." But Gibson predicted that for corporate users, dealing with the new AT&T in the future "is going to be like it is today, or potentially better."

AT&T's pricing strategy will be watched "very closely" over the next year or two if it succeeds in buying BellSouth, making it harder for the company to try to gouge users, Gibson said. "And hopefully, by having consolidated [operations], their costs will be lower," with the savings then getting passed on to users, he added. ▸

Mitch Betts and Matt Hamblen contributed to this story.

Corrections

In the Premier 100 Best in Class supplement published with this issue, the annual revenue of award-winner American Modern Insurance Group Inc. was misreported. The insurer's corporate parent, The Midlands Co. in Cincinnati, had revenue of $733 million last year. Also, the story about American Modern incorrectly reported that its $62 million systems-replacement project has fully paid for itself. Only the first phase of the project has done so thus far. In addition, the company plans to retire only the policy administration system for its casualty insurance line by year's end; the system for its property insurance line will follow later. Finally, the Huon policy administration software being deployed by American Modern is developed by The Innovation Group PLC in Whiteley, England.

The location of Rackspace Ltd.'s headquarters was listed incorrectly in a story in last week's "Katrina: Six Months Later" package ("Disaster Sharpens Views of IT's Value"). The hosting firm is based in San Antonio.

An item in last week's At Deadline column incorrectly cited Intel Corp.'s first-quarter revenue projections. Intel now expects revenue of between $8.7 billion and $9.1 billion, compared with an earlier estimate of between $9.1 billion and $9.7 billion.

Last week's On the Mark column included incorrect information that was provided by Original Software Inc. about its TestDrive-Gold application testing tool. The software has a Web front end and can work with any system that accepts browser access.

A story in last week's Technology section about network-based content monitoring systems ("Border Patrol") misidentified messaging security vendor Proofpoint Inc. Proofpoint is based in Cupertino, Calif.

EMC Unveils NAS Servers, Smarts Software

BY LUCAS MEARIAN

EMC Corp. last week introduced two new versions of its midrange and low-end network-attached storage (NAS) server. The company also brought out a new version of its Smarts software, with improved systems discovery and IP network analysis capabilities.

EMC said the Celerra NS350 and NS704 NAS servers scale to 10TB and 48TB, respectively. Both can run the new Smarts IP Availability Manager for NAS software to automatically discover NAS devices on an IP network and perform real-time root-cause analysis of server problems.

The Smarts software can also determine the effect that outages may have on associated systems throughout an IP network, which can include servers from EMC rivals.

Alex Munro, director of IT at HireRight Inc., a Web-based pre-employment screening service in Irvine, Calif., began beta-testing a Celerra NS704 late last year and is continuing to analyze it. "We did do an evaluation of EMC and NetApp in a lab," he said. "Both products were excellent. The NS704 was a little more scalable."

Munro said the NS704's multitiered storage capability let him install 2TB of capacity on Fibre Channel disk for transactional systems storage and 4TB of capacity on ATA disk for long-term storage.

The Celerra NS704 offers NAS and iSCSI connectivity and can deliver about 70,000 network file system operations per second.

Both NAS engines have native Microsoft Corp. management tools supporting multipath I/O for path fail-over, EMC said.

The NS350 with 1TB capacity retails for $47,000, and the NS704 with 2.2TB retails for $261,000. The Smarts IP Availability Manager for NAS is priced from $50,000. ▸

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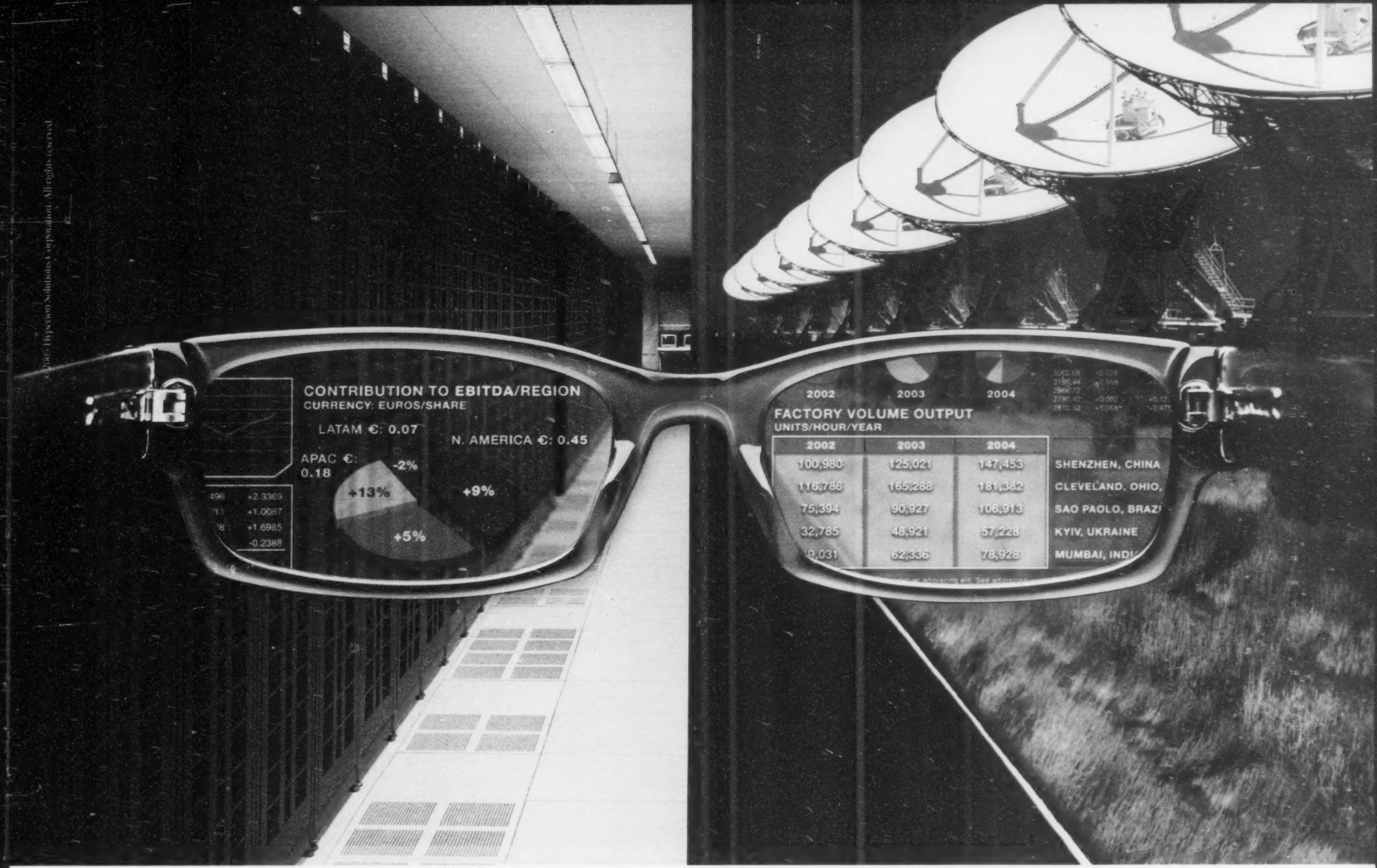
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THE BACK PAGE

FRANK HAYES ■ FRANKLY SPEAKING

Holy Grail, No More

IT'S HAPPENED AGAIN. In late February, another laptop was stolen that reportedly contained tens of thousands of names and Social Security numbers. This time, it was grabbed from the home of a state college employee in Denver; that employee had the data on the laptop in order to write a grant proposal and a master's thesis. As usual, the data was unencrypted, the investigation is ongoing, and there's a howl going up about whether the employee should have taken the data outside of school premises at all.

Funny thing, though. No one involved seems to be raising a more fundamental question: Why exactly did this employee have access to 93,000 student Social Security numbers in the first place?

After all, Social Security numbers are the Holy Grail of the identity thief. They're so widely used as unique identifiers that attaching that one number to a name is all it can take to find out nearly everything else about a potential rip-off victim.

On the other hand, they're not particularly useful for someone who is writing a grant proposal or a master's thesis.

So why *was* this employee hauling around all that highly sensitive and almost certainly unnecessary information? You know the likely answer: It came with the package.

The data that the employee wanted probably included personal information about students. The names and Social Security numbers weren't necessary for analyzing that information. Most likely, they just happened to be part of the data set.

It's possible the employee was using the Social Security numbers as unique identifiers for each student. But they still weren't necessary; any unique number would have served that purpose.

And that number wouldn't have had any value to identity thieves.

Isn't it time you started seriously protecting this highly sensitive piece of information about students, employees and customers? Not just with encryption or beefed-up authentication or gimmicks like self-destroying data, but with a much more effective technique: not giving out Social Security numbers to people who don't need them.

What a concept, huh?

Most users won't object. They don't need Social Security numbers to interact with you, and they know it. As long as you give them an alternate unique ID, they'll be happy. Some won't even need that.

Other users, who are accustomed to using Social Security numbers routinely, will complain. And there's no need for IT to be unreasonable: If a user has a legitimate need for that particular number, deliver it to them. You don't even have to set a high bar for what you count as legitimate. The goal isn't to give users trouble.

It's to keep trouble away from the people those Social Security numbers belong to.

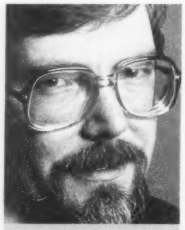
But it's time to stop treating this information as just another set of numbers. There's no mystery how this mess came to be: It dates from decades back, when Social Security numbers *weren't* so sensitive and the thick, green-bar reports IT generated weren't so likely to leave the office. Back then, including Social Security numbers really wasn't such a big deal.

Those reports gave way to client/server applications, and then data sets that users could access directly using spreadsheets and carry anywhere in laptops. Rejiggering that data to remove Social Security numbers never seemed like a high-priority project.

Make it a priority now. Identity theft isn't becoming less of a problem. Neither is laptop theft. The next stage is easy to predict: class-action lawsuits that slap a hefty penalty on organizations that let thieves grab personal information.

You can't prevent that, any more than you can prevent laptops from being stolen. But you can keep the damage to a minimum. And a great place to start is to keep Social Security numbers out of the hands of anyone who doesn't need them.

Because you know it'll happen again. And you want to make sure it doesn't happen to you. ▸



FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

There's Always a Reason

It's the mid-1990s, and as this big company converts from Windows 3.1 to Windows 95, all the PCs on one floor are freezing intermittently. "The culprit: a Win 95 system with file and print sharing enabled, which caused a network storm that knocked the 3.1 systems off," says a pilot fish there. When it starts again, an e-mail reminder is sent out – and a desktop support guy replies, "I have six users who need to share a CD. I will do whatever it takes to make them happy." Fish's response: "While your six users are working away, my 200 users are twiddling their thumbs. I doubt the company sees that as a net gain."

SHARK TANK

How, Exactly?

User calls support pilot fish complaining that her spell checker takes 20 minutes to run when she opens a document. Fish checks her settings and turns off grammar and spell check, then notices that there are more than 1,800 pages in the document. "Further digging reveals that the user has only one document," says fish. "She adds pages instead of creating new documents." Why? "To save space."

Standard Feature

Our new printer is putting creases in some pages when it prints, remote user tells support pilot fish. Is the tray overfilled? No. Any obstructions in the paper path? Nope. Anything on the rollers? *Nada*. "A few days later, I was at the site, so I checked on the printer," says fish. And she identifies the problem when she opens a paper tray: "The ream of paper had come out of the package with creases already there."

Wrong Move

Computer shop pilot fish gets a call from a local business owner, asking if fish can copy information from one hard disk to another. Sure, says fish, what's the situation? Owner explains that the PC containing all of his business records was hit by lightning. The motherboard is scorched; so is the printed circuit board on the bottom of the hard drive. "But the disks inside don't appear to be damaged," he tells fish. Sighs fish, "As gently as possible, I replied, 'They are now.' "

Trying His Best

This user's PC has been freezing every morning when he first turns it on. Powering it down and rebooting seems to clear up the problem, but after repeating the on-off-on routine for a week, he calls help desk pilot fish in desperation. "I have done everything to it I know how to do," he tells fish. "I took some alcohol and wiped the screen off and dusted off the case, and it didn't help a thing!"

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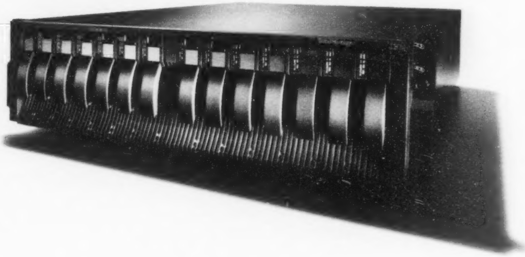

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